Appendices to May BETTA Report

Appendix 1 - Respondents to December 2001 document

The following organisations submitted responses to Ofgem's December 2001 document[1]:

Alcan Smelting and Power UK
Association of Electricity Producers
BOC Gases
British Energy plc
British Wind Energy Association
Centrica plc
Chemical Industries Association
DTI Engineering Inspectorate
EDF Energy Merchants Limited
Edison Mission Marketing & Services Limited
ELEXON Limited
energywatch
Grangemouth CHP Limited
Health & Safety Executive
Institution of Electrical Engineers
LE Group
Magnox Electric plc
Natural Power Consultants Ltd
Powergen UK plc
Scottish and Southern Energy plc
Scottish Electricity Settlements
ScottishPower UK plc
SEEBOARD plc
The National Grid Company plc
TXU Energy Limited
Wisenergy

The responses have been placed in Ofgem's library and are available on Ofgem's website www.ofgem.gov.uk.

[1] The Development of British Electricity Trading and Transmission Arrangements (BETTA) : A consultation paper, Ofgem, December 2001.

Appendix 2 - December consultation document

This appendix summarises the responses received to the December consultation document grouped according to main areas of consultation in that paper. It also sets out the Ofgem/DTI thinking behind conclusions that have been set out in this paper.

This Appendix comprises a number of Annexes, each of which deals with a particular aspect of the December consultation document. Annex 1 discusses the case for reform; Annex 2 the impact assessment; Annex 3 price controls; Annex 4 system operation and transmission ownership; Annex 5 balancing and settlement; Annex 6 CUSC and transmission charging; Annex 7 system security and quality of supply standards; Annex 8 the legal framework; and Annex 9 the project plan and organisation.

Annex 1: The case for reform

Introduction

A1.1 Ofgem's principal objective is to protect the interests of consumers, wherever appropriate by promoting effective competition. The market rules for the balancing and settlement of electricity, and connection to and use of the transmission system, can have a significant effect on the price of wholesale electricity and may impact other related markets. Furthermore, the structure of the transmission sector can also affect wholesale electricity competition. This is principally because those in control of certain transmission-related activities (for example system balancing) are in a position to influence the risks faced by market participants. The development of arrangements that do not unduly discriminate, and that facilitate efficient trading and transmission, are therefore central to Ofgem's work in protecting the interests of consumers.

A1.2 The December consultation document contended that a unified and harmonised set of GB trading and transmission arrangements would be the most effective means of promoting competition. Such reforms would open up markets to new players, and create more equitable and transparent rules to trading in such markets.

A1.3 The arrangements put in place in Scotland at privatisation were fundamentally different to those established in England & Wales. A vertically integrated structure was retained for the two host Scottish companies, together with a series of long-term contracts (the 'restructuring contracts') to allocate the output of Scottish generating plant between the host companies, and to govern use of the interconnector between England and Scotland.

A1.4 While these arrangements have not changed materially since Vesting, the December consultation document cited a number of reasons why the possibility of more competitive arrangements is increasingly relevant, particularly, the limited duration of the remaining restructuring contracts, and the lessening of transmission constraints between England and Scotland.

A1.5 Three of the restructuring contracts may end over the next decade, which in tandem with a reduction in the system constraints that limit the flow of electricity between Scotland and England will potentially release significant

amounts of capacity to a wider market. Allied to this is the potential growth in renewable generation capacity connecting in Scotland. There is therefore likely to be a step increase in the market liquidity for Scottish generation output over the next decade. The absence of effective market mechanisms in such circumstances will lead to distortions and inefficiencies in respect of the use of this capacity.

A1.6 However, while the factors above indicate why reform might be timely, the main case for reform as set out in the December consultation document related to the degree to which competition across GB can be expected to promote efficiency and reduce costs to consumers. It was contended that the lack of wholesale competition, with protection for consumers through explicit regulation of wholesale prices and top-up and spill prices available to non-host suppliers, was a second-best solution. A comparison of developments in England & Wales and Scotland in both wholesale and retail markets since Vesting were used to illustrate this point.

A1.7 The design of NETA, while limited to the market in England & Wales, has provided valuable insights in both theory and practice to the development of competitive arrangements, and the identification of barriers to such competition. The December consultation document concluded that NETA provided an appropriate basis upon which to develop GB arrangements, given that NETA has successfully met its objectives and that there is a significant degree of overlap with the objectives for BETTA. It was also noted that a design based on NETA could have additional practical benefits in terms of system and development costs.

Responses

A1.8 Twenty-two respondents commented on the case for reform, either directly or indirectly. These views are summarised below.

A1.9 The majority of respondents supported the overall objective of BETTA to reform trading arrangements to promote more effective competition. There was also broad support for the notion that competition should be promoted across GB. One respondent stated that 'competition in the Scottish market is totally inadequate', while another noted that the Scottish market is not competitive and that arrangements lack transparency – and that this has acted to the detriment of

Scottish consumers and potential new entrants. One respondent noted that there is a lack of satisfactory arrangements for independent generators. Another respondent expressed strong support for the NETA reforms, and stated that GB arrangements should be based on the NETA design.

A1.10 However, one respondent explicitly questioned the value of competition as a means of reducing prices, and also questioned the extent to which NETA provided appropriate longer-term price signals and therefore the degree to which it represented an appropriate model for GB arrangements. One respondent welcomed the commitment by Ofgem to the BETTA reforms, while noting that its perception of problems in Scotland are not wholly referable to the present trading arrangements.

A1.11 A number of respondents made explicit reference to perceived deficiencies in the arrangements for accessing the interconnector, and welcomed the proposed incorporation of these assets into the GB transmission system via BETTA. Four of these respondents cited reform of the interconnector as essential in creating more competitive arrangements. A number of respondents also stressed the system operator's independence as an essential element of creating a more competitive regime.

A1.12 A significant number of respondents expressed the need for implementation costs to be considered in more detail prior to finalising the design of BETTA. A significant proportion of these respondents called for a formal cost/benefit analysis to be carried out. A number of these respondents stressed the importance of capturing all costs, and not just those costs incurred centrally, through this analysis. One respondent noted that its ability to take a view on the proposals was constrained by the lack of detailed information on implementation costs. Another respondent stated that a lack of clarity on timescales could subsequently lead to higher implementation costs.

A1.13 A small number of respondents commented on the potential savings in development and implementation costs through use of existing NETA systems. One respondent commented that the arrangements in England & Wales provided a 'sound and pragmatic' platform for GB arrangements. One respondent noted that it was probably the case that implementation costs would be relatively low, but that this should be assessed formally through a Regulatory Impact Assessment.

A1.14 One respondent stated that the vision of BETTA, whereby all parties are treated equitably within a GB market, is an attractive one. It agreed with what it characterised as Ofgem's view that circumstances in Scotland have materially changed such that the current arrangements now constitute a barrier to effective competition, but contended that any such reform must recognise the 'holistic' nature of the arrangements put in place at Vesting, including the 'restructuring contracts' – and that all such arrangements should be dismantled through the BETTA reforms. This respondent argued that consideration of issues, e.g. interconnector reform, in isolation can be misleading.

A1.15 The same respondent expressed a view that Ofgem's interpretation of facts in respect of retail competition was not meaningful. It argued that different trends in retail prices in England & Wales and Scotland reflect different network costs. The question was not therefore whether prices are too high now, but why prices were so low relative to England & Wales in the years immediately after Vesting. It also stated that Ofgem's 'assertion' that the lack of an independent system operator adversely affected the development of competition was not supported by evidence, and that existing arrangements whereby the behaviour of the system operator is regulated and affiliate[2] interests are in separate legal entities are consistent with relevant current and future EU directives. It also noted that arrangements for top-up and spill are approved by Ofgem, and do not unduly favour host generators, relative to generators in England & Wales and relative to other generators located in Scotland.

A1.16 Another respondent expressed strong views that the case for reform put forward by Ofgem in support of the BETTA proposals was not sufficiently compelling. It noted that reform per se was necessary in the context of the end of the Nuclear Energy Agreement (NEA) and an expected increase in the number of renewable generators connecting in Scotland. It also noted that it was not in principle opposed to GB trading reforms. However, it challenged a number of the arguments set out by Ofgem in the December consultation document in support of BETTA.

A1.17 The respondent took particular exception to the suggestion of a link between the lack of competition in wholesale markets and subsequent developments in retail markets. It 'absolutely refuted' Ofgem's view that a lack of wholesale

[2] In this document, "affilitated" means within the same corporate group, or within the same company and "affiliate" means another entity within the sam corporate group or within the same company.

competition had restricted supply competition and noted that the arrangements for suppliers to procure generation are explicitly regulated by Ofgem. It also challenged the use of simple price comparisons, noting the importance of network costs in understanding trends in prices. It contended that prices in Scotland were in fact lower than England & Wales on a like-for-like basis, adjusting for network costs, the fossil fuel levy, and the cost of electricity procured through the NEA. It observed that the trend of divestment and new entry in England & Wales has not been seen in Scotland because of the nature of generating assets in Scotland and not because of a lack of competitive trading arrangements.

A1.18 The same respondent contended that the BETTA reforms did not address the key issues for Scotland, which it saw as the likely dramatic increase in generating capacity consequent to the Renewables Obligation and the natural comparative advantages of Scotland in respect of renewable technologies, most notably wind power. It stated that plans to upgrade the transmission system to accommodate such projected changes in plant mix and location should be urgently considered.

A1.19 Another respondent stated that it understood the rationale for BETTA and appreciated that the proposals represent one way of introducing competitive arrangements across GB without requiring divestment. It also expressed support for the underlying principle of not requiring divestment of transmission assets. However, a number of concerns were highlighted about the potential impact of the reforms in England & Wales and in particular how the interests of the system operator, transmission owners and consumers could be aligned within this type of model. It contended that any solution which retained a split between transmission owner and system operator would necessarily be 'second–best' in comparison to a single 'transco' model in this regard. A 'transco' model means one in which the system operator and the transmission owners are in common ownership.

A1.20 It also questioned the extent to which BETTA would reduce prices, relative to the continuation of administered arrangements in Scotland which, in effect, pegged prices to out-turn prices in England & Wales. The use of simple price comparisons, unadjusted for network costs, was also questioned. It expressed support for a full Regulatory Impact Assessment to be performed to demonstrate that the proposals would be in the public interest and beneficial to all consumers.

Annex 2: Impact assessment

Introduction

A2.1 The section below addresses a number of specific comments raised by respondents to the December consultation document in relation to the potential impact of BETTA. The comments addressed are grouped under the following headings:

- Impact on retail markets; and
- Implementation costs and Regulatory Impact Assessments.

Impact on retail markets

A2.2 Three respondents to the December consultation document questioned the degree to which the proposals could be expected to affect retail prices. One 'absolutely refuted' the suggestion that existing arrangements in Scottish wholesale markets affected competition at the retail level, stating that 'all suppliers are able to procure generation to meet all of their demand in Scotland' from Scottish Power or Scottish and Southern. Ofgem/DTI continue to believe that existing administered arrangements in Scotland do not constitute a competitive wholesale electricity market. The ability of independent suppliers to procure significant quantities of energy in Scotland from the two dominant incumbent generators alone serves to underline, rather than undermine the lack of competition in the current generation sector.

A2.3 The same three respondents also questioned the meaningfulness of the price comparison information set out in the document in the light of differences in network costs underpinning such comparisons. One noted that it was important that debate is not distorted by misleading statements.

A2.4 Ofgem/DTI agree that comparisons of retail prices allowing for charging differences in network costs demonstrate that retail prices in Scotland have moved broadly in line with those in England & Wales. This is not surprising given that wholesale prices to non-host suppliers are linked to a basket of England & Wales prices through regulation.

A2.5 However, a straight comparison of prices in England & Wales and Scotland, adjusted for network costs or not, does not provide the main justification for BETTA and it was not the intention of the December consultation document to give this impression. The case for BETTA is based on the extent to which the reforms will facilitate greater competition.

A2.6 The key issue for the case for reform, therefore, is not what out-turn prices are constrained to be in practice through regulation, but rather what scope there is for prices to fall as a result of greater competition. The appropriate comparison is therefore between prices under (a) competitive GB trading arrangements, and (b) the current hybrid of competitive and regulated prices. Such a comparison is necessarily hypothetical and uncertain. Actual outcomes from a competitive process reflect a range of complex interactions over time.

A2.7 However, there are a number of factors that can be borne in mind in anticipating the direction of change, at least:

- the current administered prices are set by consent with the companies, and are not formalised within a licence condition (which would give SP and SSE a route to resolve disputes via the Competition Commission). This implies that the administered pricing arrangements in Scotland must be acceptable to SP and SSE in the light of their generation costs and the prevailing market and contractual arrangements;

- the generation sector in Scotland has not been subject to any significant entry or exit since Vesting;

- Scottish wholesale prices are not determined by the costs of production of Scottish generators;

- the absence of effective competitive arrangements must, in Ofgem/DTI's view, distort the investment decisions of independent generators considering market entry and the investment decisions of host generators considering exit (or entry, through increasing capacity) – a point supported by a number of respondents; and

- the incentives for non-host suppliers to procure electricity more efficiently are tempered by the administered arrangements, which in effect ensure that all non-host suppliers face the same wholesale price.

A2.8 In Ofgem/DTI's view, the points set out above suggest collectively that more competitive GB arrangements will reduce wholesale prices relative to the current mix of market and administered prices – since wholesale prices will bear a closer relationship to the costs of generation, and suppliers will have greater incentive and opportunity to procure energy more efficiently. While this process will take time to evolve, it is unambiguously beneficial for consumers. In Ofgem/DTI's view, the suggestion of some respondents that administered arrangements in Scotland are as 'as good, if not better' for consumers than competitive arrangements is not accepted and is not consistent with Ofgem's statutory duties.

Implementation costs and Regulatory Impact Assessments (RIAs)

A2.9 Many respondents highlighted the need for more detailed consideration of the practicalities of implementation and in particular the costs of implementation for all affected parties. A number of respondents called for a formal Regulatory Impact Assessment to be undertaken.

A2.10 A consideration of the costs and benefits of any measure is implicit in Ofgem's statutory duty to protect the interests of consumers. A rationale for each set of proposals is usually included in all Ofgem consultation documents. It would be inconsistent with this statutory duty to commit the industry to incur significant costs, which will ultimately be passed on to consumers, for minimal benefits. It would, however, also be inconsistent with this statutory duty to overlook reforms that promote effective competition, where such competition is appropriate. It is hoped that the December consultation document and the current document explain why Ofgem/DTI believe BETTA to be necessary and appropriate.

A2.11 In terms of the detail, Ofgem/DTI agree that more information on the level of costs associated with implementing BETTA and how such costs (where efficiently incurred) might be recovered, is important in informing debate. However, it should also be recognised that costs can only be estimated with any degree of certainty once key design issues which are presently under consideration have been finalised.

A2.12 As the implementation of BETTA requires primary legislation, it is incumbent on the DTI to conduct and publish a Regulatory Impact Assessment and

Competition Assessment, in line with Cabinet Office and Office of Fair Trading guidance. An RIA is generally published with the relevant Bill or Statutory Instrument (SI). It is also standard practice to publish and consult on preliminary RIA findings prior to the publication of the Bill or SI.

A2.13 The preliminary findings of the DTI's Regulatory Impact Assessment, which has been informed by discussions with Ofgem, are published as Appendix 3 to this document. The Competition Assessment forms part of the RIA. Comments on Appendix 3 are invited in Section 1 of the main document.

Annex 3: System operation and transmission ownership

Introduction

A3.1 The December consultation document explained that the implementation of BETTA would require the creation of a single GB system operator and suggested that it was appropriate for certain transmission related functions to be carried out by a party that was not affiliated with the market activities of generation and/or supply. It was proposed that as a minimum such functions should include the procurement and call-off of balancing services.

A3.2 The December consultation document also noted that it was not proposed to require a divestment of transmission assets[3] as part of BETTA. Given the intent to place responsibility for GB balancing with a single system operator, it was explained that this meant that responsibility for carrying out existing transmission functions would necessarily be split.

A3.3 The December consultation document set down some of the issues associated with, and invited views on, the criteria for deciding whether system operation and other transmission related functions should be allocated to the system operator or to transmission owners and the appropriate allocation of a number of such transmission functions in light of the criteria suggested.

A3.4 Three illustrative models were described. They proposed different divisions of responsibility for transmission functions between the system operator and the transmission owners. A further model developed by working groups established after Ofgem's August 2000 consultation paper was also discussed.

Criteria for allocation of functions

A3.5 The December consultation document suggested that the criteria for allocating functions should be assessed in the light of how well the arrangements promote efficiency, both in the conduct of the system operator and the transmission owners themselves, and most importantly in the wider operation of the market. Ofgem suggested that the following criteria were relevant in this regard:

[3] It is anticipated that BETTA would result in the requirement for certain staff and assets to transfer from existing transmission licensees to the GB system operator. However, it is not intended that assets forming part of the transmission system itself would transfer other than in certain discrete respects – see para 5.18 of main text.

- the demonstrable independence of the system operator (from generation and supply market interests);
- the costs of separation;
- the practicality of operating separated functions;
- access to confidential information;
- the efficient incentive-based regulation of system operator and transmission owner activities; and
- the ability to ensure effective asset risk management.

A3.6 Views were invited on:

- the factors suggested as appropriate criteria to guide the allocation of transmission functions, and in particular whether the factors discussed above were correct and/or complete;
- the relative importance of the factors identified;
- whether or not system operation and competitive market activities such as supply and/or generation should be permitted in the same group ownership;
- the appropriateness of any mitigating actions identified to deal with issues that might arise;
- suggestions for other mitigating actions that might be contemplated; and
- any other related matters, whether or not included in the December consultation document.

A3.7 In the December consultation document, two specific issues were also discussed in more detail. These were, first whether it was appropriate to permit the system operator to be affiliated to others with interests in the generation and/or supply of electricity, and second whether it was appropriate to permit the system operator to be affiliated to one or more transmission owners.

Separation of system operation from generation and supply

Respondents' views

A3.8 Whilst noting that seven respondents believed that it was important to demonstrate further the cost-benefit analysis of BETTA prior to moving ahead with the reforms, there was widespread agreement that the system operator should be demonstrably independent from functions affecting generation and/or supply. Some respondents suggested that system operation and competitive market activities such as supply and/or generation should not be permitted to be carried out in the same group ownership.

A3.9 One respondent was concerned about any model in which the system operator or the transmission owner has or is able to develop affiliates with transmission–connected generation assets.

A3.10 Separately, individual respondents commented that:

- there were existing precedents for ensuring that functions with conflicts of interest can coexist within the same corporate entity. It also believed that the transparency of the balancing arrangements under NETA and the number of generators in this market would provide a further discipline for the system operator not to favour any affiliated supply or generation business. It indicated that it was not convinced that there was any scope for a transmission owner to favour its affiliated generation particularly because transmission charges would be subject to Ofgem approval. It also noted that measures could be put in place to protect commercially confidential information;

- suitable governance arrangements for the system operator should be put in place to reinforce the existing protections against potential discriminatory behaviour which might arise should the system operator be affiliated to any competitive electricity interests; and

- the interests of both transmission owner and system operator must be fully aligned with those of consumers and that such alignment would be less than complete while the transmission owner has affiliations with other commercial interests in the Scottish electricity market. It favoured a

deep system operator model which created a system operator independent of market interests.

Ofgem/DTI views

A3.11 Ofgem/DTI continue to believe that promoting competition in generation and supply requires that there is access to the transmission system which is, and which is perceived to be, independent and non-discriminatory. In accordance with the views of the substantial majority of respondents to the December consultation document, Ofgem/DTI agree that this requires that certain functions are undertaken by a party or parties that do not have affiliated interests in market–related activities. Ofgem/DTI believe that one such function is the purchase and call-off of balancing services. Given that it is proposed that the GB system operator will be responsible for operating the balancing mechanism (i.e. it will at a minimum be responsible for the procurement and call-off of some balancing services) it is concluded that the GB system operator should be separate from affiliations with generation and/or supply.

Separation of system operation from transmission ownership

Respondents' views

A3.12 A number of respondents suggested that the activity of system operation should be separate from transmission ownership or expressed concern that there may be scope for the system operator to favour affiliated transmission owners.

A3.13 Some said that there were cost inefficiencies associated with the separation of functions, and one believed that Ofgem should undertake a cost-benefit analysis to provide guidance on the trade-offs involved.

A3.14 One respondent believed that the system operator should be independent from transmission ownership if multiple transmission owners existed, although believed that this would not be necessary if there was a single GB transmission owner. Another said that the creation of a single UK transmission system operator, under the ownership of a company independent from the current owners of the Scottish network, is essential.

A3.15 Those respondents who believed that it was appropriate for system operation to be separate from transmission ownership argued that in the absence of such

separation, there would be scope for discrimination between transmission owners by the system operator. One respondent believed that the possibility for decisions of the system operator to have differential adverse impacts on transmission owners would stem particularly from the distinct geographic nature of existing transmission owners. One respondent noted that deeper system operator models appear to allow for the possibility of introducing competition in the provision of transmission assets.

A3.16 Two respondents argued that it was appropriate to separate the activity of system operation from transmission ownership so as to avoid conflicts of interest in areas where transmission competed with market services, citing the example that reactive compensation transmission equipment may be in competition with generating units in the provision of reactive compensation.

A3.17 One respondent said that the relationship between the system operator and each of the three transmission owners should be equitable, and that the most equitable arrangement is achieved by requiring the system operator to be independent of other interests including transmission ownership. It indicated that it believed that scope for the perception of bias may arise particularly in the areas of connection offers and use of system charging. It argued that because as a minimum two of the transmission owners will be separate from the system operator, it would be necessary to structure incentive schemes so that they work appropriately between a system operator and transmission owner in separate ownership. To the extent that efficiency gains could be realised through common ownership, this could lead to charges of a system operator favouring its affiliated transmission owner.

A3.18 Another respondent indicated that although it did not believe that there was any significant opportunity for a system operator to favour affiliated generation it believed that there were opportunities for a system operator to favour an affiliated transmission owner. This, it stated, was because the system operator actions were much less transparent and less subject to competitive oversight. It believed that without proper controls, the system operator would have the inherent ability to influence profits and costs in both affiliated monopoly functions (transmission owner and system operator) and competitive market activities. It believed that the scale of this influence may be as great, if not greater, in a large affiliated transmission owner as in an affiliated generation or supply business. Where the system operator was affiliated to one, but not all, of

the transmission owners, it believed that with an associated incentive scheme, there will inevitably be opportunities for a combined system operator/transmission owner to maximise commercial advantages to the detriment of other transmission owners and potentially the market in general. Examples quoted included the resolution of "nested" constraints where the system operator would have the opportunity to favour solutions which maximised constraint incentives to the affiliated transmission owner to the disadvantage of other transmission owners leading to sub-optimal market solutions. Another example was that the system operator could favour balancing solutions from its affiliated transmission owner rather than from non-affiliated transmission owners or the market in general (e.g. in the provision of reactive power).

A3.19 One respondent believed that the integrated system operator and transmission owner structure in England & Wales should be retained and this system operator activity should be extended to Scotland to create the GB system operator activity. It believed that costs and inefficiencies could be introduced across the interface between the system operator and transmission owner, and that this should be avoided (at least) in England & Wales. It believed that introducing any transmission owner-system operator split would lead to economic inefficiencies in terms of transaction costs and difficulty in providing appropriate incentives and performance measures for both the system operator and the transmission owners that align fully with the interests of consumers. Furthermore, it believed that more critically, it could create ambiguity in the responsibility and accountability for key issues such as long-term asset integrity, health and safety, environmental management and system security. It provided a number of areas in which it believed inefficiencies would arise if the system operator and transmission owner functions were separated. A selection of some of the areas in which it believed that existing advantages may be lost if the activities of transmission ownership and GB system operation are split included:

- use of short-term plant ratings in the management of system constraints;
- use of real time load monitoring equipment on transmission plant;
- predictive rather than probabilistic methods of rating determination;

- provision of transmission plant outside normal planning criteria, specifically for the management of constraints and to provide flexibility against future uncertainty, i.e. the premium for specialised relocatable equipment; and

- flexible outage arrangements e.g. live line working, short emergency return to service times, accelerated/overnight maintenance, employing circuit breaker bypass arrangements, and optimised maintenance schedules.

A3.20 It also believed that inefficiencies could arise in the following areas:

- the establishment of new information flows between the GB system operator and transmission owner, whereas such flows are internalised within a combined system operator/transmission owner activity;

- restructuring costs associated with development of the contractual interface between the GB system operator and transmission owners, staff transfer costs and re-working regulatory price controls for the new activities; and

- the creation of additional transaction costs, for example to manage the contractual interface between GB system operator and transmission owner, including the duplication of some functions.

Ofgem/DTI views

A3.21 It is recognised that there are potential benefits in separating the GB system operator from all transmission owners as this would avoid the possibility that the GB system operator would discriminate between non-affiliated and affiliated transmission owners. At the same time, there are benefits from the integrated management of transmission functions, where these are free of market-related affiliations. For example, in England & Wales there have been significant savings in the costs of managing transmission. Ofgem/DTI believe that these benefits should be capable of being retained providing they are not outweighed by inefficiencies due to any perverse incentives on the GB system operator to favour affiliated transmission owners.

A3.22 Ofgem/DTI believe that appropriate incentives and licence conditions on transmission owners and the GB system operator will, in conjunction with the availability of recourse to competition law, be capable of regulating effectively any incentive on the GB system operator to favour its affiliated transmission owner. Rather than exacerbate the potential problem, the geographically distinct nature of the three existing transmission systems will serve to significantly reduce the scope for cross-substitutability between solutions in the three systems, and hence Ofgem/DTI believe there is relatively little scope for favouring investment (for example), in an affiliated network when investment in one of the non-affiliated networks would have been the more efficient solution. Furthermore, any such action by the GB system operator is likely to be very apparent, and any scope of bias would be minimised by ensuring that the revenues for transmission owners did not accrue in such a manner that the system operator could not enhance the profits of an affiliated transmission owner by taking perverse operational decisions (as, for example, might be the case if revenues to transmission owners were dependent upon MW-mile utilisation of assets).

A3.23 The possible inefficiencies arising from any perverse incentives for the GB system operator to discriminate in favour of an affiliated transmission owner should be substantially lower than the efficiencies of integrated management that would be lost with the separation of the GB system operator and transmission owner functions. On balance, Ofgem/DTI do not believe that it is necessary to require the GB system operator to be separate from transmission owners and that, subject to the criteria set out above, the potential for gaining efficiencies from the integrated management of system operation and transmission ownership should be possible under the BETTA arrangements.

A3.24 A related issue raised in the responses to the consultation was that it was considered appropriate for the GB system operator to be separate from transmission ownership so as to avoid conflicts of interest in areas where transmission competes with market services, for example where reactive compensation transmission equipment may be in competition with generating units in the provision of reactive compensation.

A3.25 The debate over issues arising from competition between transmission and generation in certain areas (in particular reactive compensation) has been ongoing for many years. It is an issue that exists within the current England &

Wales markets as well as those in Scotland. Given the intent to continue to regulate the transmission sector under BETTA, striking the right balance between levels of (or use of) generation and transmission assets will continue to rely on the effectiveness of the regulation of transmission, irrespective of whether the system operator is or is not affiliated to one or more transmission owners. Ofgem/DTI believe that any further associated issues arising from affiliation between the GB system operator and transmission owners are likely to be outweighed by the efficiency savings associated with joint ownership and operation of transmission. Where possible, Ofgem/DTI believe it is appropriate to continue to allow for the possibility of such efficiency savings to be realised and do not believe that it is necessary to prohibit affiliation per se between the GB system operator and transmission owners.

Criteria for allocation of functions

Respondents' views

A3.26 The majority of respondents expressed broad agreement with the criteria proposed in the December consultation document, although a number of additional or, in some cases rephrased criteria were suggested by respondents. These included the following:

- that the initial split should represent a pragmatic approach that facilitates a practical implementation by April 2004;
- whether efficient incentives can be set for the separately regulated activities;
- the extent to which the separate activities can be ring-fenced and reported upon;
- the costs and practicality of implementing the change;
- potential impact on users of the transmission network, including the costs of any changes to systems, and the impact on existing commercial arrangements;
- whether the structure minimises barriers to entry for those in the competitive sectors of the market;

- whether or not wires businesses are affiliated to market activities (i.e. generation and supply);
- the detail and complexity of the price controls to be applied to the system operator and transmission owners;
- the ability of the transmission owner to be able to control its own network and thereby to be able to comply with existing and proposed regulations relating to the safety of electrical equipment and quality and continuity of supply;
- the fact that transmission owners are best placed to manage their own networks;
- the ability to ensure that quality and security of supply is not compromised;
- the ability to ensure effective health and safety management;
- the ability to ensure effective environmental management;
- compliance with relevant European Union Directives;
- economic purchase of balancing services;
- complexity of the customer interface;
- the benefits of running integrated distribution and transmission businesses in Scotland in providing connections;
- the ability of transmission owners to develop a network which will facilitate Government policy in facilitating the development of renewable energy;
- the development of a cost effective network;
- assurance and a transparent methodology for recovering costs associated with implementing the change; and
- establishment of and compensation for shareholder value lost as a consequence of any reallocation of existing functions.

Ofgem/DTI views

A3.27 Ofgem/DTI believe that most of the additional criteria identified by respondents were implicitly included in the list of criteria set down in Ofgem's list of criteria in the December consultation document. It is however appropriate to clarify where this is the case and to update the list of criteria to reflect more precisely the intention of each criterion and in some cases to include additional criteria.

A3.28 To this end, it is proposed that the criteria to be used in determining the allocation of functions between the GB system operator and transmission owners should be such that the allocation ensures that:

(1a) functions that directly affect market participants, and which cannot be easily codified and effectively monitored to ensure that no bias is being exercised, be separated from those with market affiliations;

(1b) access to confidential data, which may reveal the intentions of participants in market-based activities, should be available only to those that do not have affiliated interests in those same market-based activities;

(2a) it is practical, efficient and economic to undertake the various functions of the system operator separately from the functions of the separate transmission owners;

(2b) appropriate incentives can be given to each of the system operator and transmission owners to undertake their separate activities in an efficient, coordinated and economic manner;

(3) the one-off costs of effecting the changes should be as low as possible, taking into account both central costs and participants' costs;

(4) security of supply must not be jeopardized; and

(5) there is the ability to ensure effective asset management, including safety and environmental issues to meet both shorter and longer term obligations.

A3.29 In the above list, criteria 1a and 1b have been grouped because they both relate to issues associated with independence from generation and/or supply. Similarly

2a and 2b have been grouped because they both relate to efficiency in operation.

A3.30 Of the additional criteria suggested by respondents to the December consultation document, Ofgem/DTI believe that criterion 2a now incorporates: the detail and complexity of the price controls to be applied to the GB system operator and transmission owners; and the benefits of running integrated distribution and transmission businesses in Scotland in providing connections.

A3.31 Criterion 2b incorporates: the complexity of the customer interface; whether efficient incentives can be set on the separately regulated activities; whether the structure minimises barriers to entry for those in the competitive sectors of the market; the economic purchase of balancing services and the development of a cost effective network. This also incorporates the ability of the overall arrangements to ensure a consistent approach to the development of a network in response to new generation connections and load growth.

A3.32 Whether or not wires businesses are affiliated to market activities (i.e. generation and supply) is a factor that can significantly affect the allocation of functions between the GB system operator and the transmission owners. If all wires businesses were separate from generation and supply, then the issues associated with allocating functions that significantly affect market functions to the transmission owners would be avoided.

A3.33 One of the assumptions of BETTA is that divestment of assets comprising the transmission system will not be required except where appropriate for those assets directly connected with GB system operator functions. Therefore the scope for affiliation between transmission owners and market related functions may continue (in Scotland at least) and hence the affiliation between wires and generation and supply is not a criterion for selecting between different models, but a given for all of them.

A3.34 The extent to which the separate activities can be ring-fenced and reported upon is now implicitly included in criterion 1a, which indicates that those functions that cannot be easily “codified” and “monitored” should be carried out by those without market affiliations.

A3.35 Whilst it will be important to give appropriate consideration to such matters, Ofgem/DTI do not believe that “assurance and a transparent methodology for

recovering costs associated with implementing the change" should have a bearing on the split of functions between the GB system operator and the transmission owners. Neither (except to the extent that it has a bearing on criteria 2a) should the "establishment and compensation of shareholder value lost as a consequence of any reallocation existing functions" favour any one particular allocation of functions over any other.

A3.36 Ofgem has indicated that it considers asset risk management to be a key responsibility for all network companies, whilst recognising that the obligations could be adequately discharged by a number of different business models. Ofgem has recently published a consultation document on these issues[4], and the requirement to take them into account is reflected in criterion 5.

A3.37 Insofar as meeting legislative requirements is concerned, it will clearly be necessary to ensure that any arrangements are consistent with European directives and other legislation. Ofgem/DTI believe that this is another given for all models, rather than a criterion for selecting between alternative models. As a consequence, compliance with legislation is not included in the list of criteria.

A3.38 It is intended that the changes made to implement BETTA should only be those which are specifically needed to meet the objectives of BETTA. As this is the case, and in light of comments received to the consultation paper, it is proposed to introduce one further criterion as follows:

(6) functions continue to be carried out by those parties who are currently responsible for them unless there is a requirement to reallocate responsibility in order to meet the objectives of BETTA.

A3.39 In relation to criteria 4 and 5, the development of the GB system operator and transmission owner functions as part of BETTA will also take into account:

- any new standards or obligations on transmission licensees identified as part of the DTI/Ofgem review of licensees' contingency response and emergency preparedness;

[4] Asset Risk Management in electricity and gas networks – Conclusions on framework and proposals for the survey. Ofgem, April 2002.

- obligations in the current Electricity Supply Regulations and those that arise under the proposed Electricity Supply, Quality and Continuity Regulations; and

- facilitating the requirements of the health, safety and environmental legislation.

A3.40 Insofar as prioritisation of criteria is concerned, Ofgem/DTI believe that all criteria need to be taken into account but that a degree of trade-off will be needed to formulate a practical solution. Particular weight will need to be given to 1a and 1b, given the context of the BETTA objectives, but other than this, the numbering of the criteria outlined above should not be taken to imply any hierarchy or priority. In any event, given that different solutions are likely to meet the various criteria to differing degrees, an overly quantitative approach to analysing solutions is unlikely to be practicable.

Allocation of transmission functions

A3.41 The December consultation document noted that the activity of electricity transmission currently undertaken by the existing transmission licensees in GB encompasses a broad spectrum of functions and noted that it would be necessary to determine which of those functions should be allocated to the GB system operator as part of BETTA.

A3.42 The functions considered were:

- purchase and call-off of balancing services;

- determining the real-time configuration of the transmission system;

- switching the transmission system;

- transmission system investment planning;

- construction of new transmission system assets; and

- transmission system maintenance.

A3.43 The December consultation document discussed whether each of the functions should be undertaken by the GB system operator or by the transmission owners in light of the criteria that had been proposed for determining the allocation. The

December consultation document also described a number of illustrative models of the split in functions, these models were termed the Shallow system operator, Intermediate system operator and Deep system operator, the "depth" of the system operator reflecting the scope of functions allocated to it.

A3.44 Under the Shallow system operator, the GB system operator would be responsible essentially only for procurement and call-off of balancing services in operational timescales and for directing the configuration of the transmission system in real-time. All other transmission-related functions currently carried out by the transmission licensees would be carried out by the transmission owners. It was suggested that the Shallow system operator model represented the minimum set of functions that would need to be allocated to the GB system operator in order to achieve the implementation of a single GB wholesale electricity market.

A3.45 Under the Intermediate system operator model, the GB system operator was also allocated responsibility for approving transmission outage plans and for approving new construction plans. Under the Deep system operator model, the GB system operator also undertook the functions of developing the regional maintenance outage plans and undertaking transmission system investment planning. In all of the models considered, transmission asset maintenance was carried out by the transmission owners.

A3.46 The December consultation document also explained that a number of Workgroups established after the August 2000 Consultation Paper developed, amongst other things, arrangements for the creation of a GB system operator to manage a GB balancing mechanism and its interface with the three transmission operators which they believed could be achieved without the need for legislation. One of the products of this work was a model for the creation of a single GB system operator and a single GB balancing mechanism. Views were also invited as to the appropriateness of adopting this model.

Respondents' views

A3.47 A wide spectrum of views was received from respondents in commenting on the most appropriate of the models discussed in the December consultation document. Most of the reasons why individual respondents favoured particular models have been discussed above in the context of comments received on the

criteria for allocation of functions, and as such are not repeated here. In some cases whilst useful issues were raised, no specific view was given of the favoured model, and in others, views expressed were dependent upon other factors (such as whether or not the transmission owners were independent from market activities). A number of respondents also believed that further work was necessary before deciding upon the allocation of responsibilities.

Ofgem/DTI views

A3.48 Given the responses to the December consultation document, the development of the criteria discussed above and the process undertaken to date, Ofgem/DTI believe that it is now appropriate to initially conclude on the allocation of certain transmission related functions. Ofgem/DTI recognise that based on these initial conclusions it will be necessary to develop the detailed allocation of functions between the GB system operator and the transmission owners, and that in doing so it will be necessary to consider further the practicalities and costs associated with such splits. It is intended that further consultation documents will address the issues of more detailed allocations of transmission functions, the detail of the legal interface between the GB system operator and transmission owners and the form of incentive regulation to be applied to each. In progressing this work, it is proposed that the criteria identified above would be used in allocating the responsibility for more detailed functions to the GB system operator or to the transmission owners.

A3.49 Whilst it is recognised that it is possible that working up further detail of the arrangements may reveal that the initial conclusions need to be revisited in order to achieve a more appropriate balance between meeting the various criteria, Ofgem/DTI believe that it is appropriate to make certain decisions at this stage in the process.

A3.50 In order to satisfy criteria 1a and 1b, responsibility for purchase and call-off of balancing services in all timescales, and responsibility for directing the configuration of the operational transmission system should lie with the GB system operator. The activity of procurement and call-off of balancing services does directly affect market participants, and cannot, be easily codified and or monitored to ensure that no bias is being exercised. Placing this activity with the GB system operator is consistent with the substantial majority of respondents who expressed a view on this matter in response to the December consultation

document. It is therefore essential that this activity be separated from those with market affiliations.

A3.51 Allocating responsibility for purchase and call-off of all balancing services to the GB system operator also allows a number of the other criteria to be met. First it would help to restrict access to confidential data, which may reveal the intentions of participants in market-based activities, only to those that do not have affiliated interests in those same market-based activities (i.e. the GB system operator). Placing responsibility for purchase and call-off of balancing services with a single party would also serve to significantly simplify arrangements and hence would constitute a practical implementation approach (rather than, for example, splitting between the GB system operator and the transmission owners responsibility for purchase and call-off of different balancing services). It would also permit appropriate incentives to be given to the GB system operator in order to manage the associated costs. Because responsibilities would be clear, placing sole responsibility for purchase and call off of balancing services with a single organisation would also serve to ensure that security of supply was not jeopardised and would help to ensure effective health and safety management. Finally, as is noted above, Ofgem/DTI agree with the majority of respondents to the December consultation document that in order to promote wholesale competition it is appropriate that the purchase and call off of balancing services is carried out independently from those with market affiliations. As this is the case, a change in responsibilities in this area is required in order to meet the objectives of BETTA.

A3.52 For the same reasons, it is also appropriate to allocate responsibility for directing the configuration of the operational transmission system to the GB system operator. Furthermore, given the decision to place responsibility for purchase and call-off of balancing services to the GB system operator, to place responsibility for directing transmission system configuration with another party or parties would be likely to introduce significant additional practical difficulties.

A3.53 The responsibility for directing the configuration of the operational transmission system should, in this context, also include a formal role in co-ordinating the scheduling for construction and maintenance outages and a formal role in understanding and agreeing outage changes, including the need to cancel or shorten outages. Changes need to take into account issues such as system security, balancing services costs and factors that arise from asset risk

management. It is for further consideration exactly what role and incentives transmission owners should have in determining the timing of maintenance and construction outages. This could range from their proposing an initial outage schedule to the GB system operator for approval to having the GB system operator more directly involved in co-ordination and work scheduling. In any event, it is envisaged that the transmission owners would be responsible for identifying asset maintenance requirements in the first instance. Transmission owners would continue to own their existing transmission assets, and new transmission assets within their areas, and would also be responsible for carrying out maintenance on those assets and optimising associated costs.

A3.54 Subject to changes arising consequent to developments on NGC's SO incentive scheme in England & Wales and/or transmission access, which is discussed further below, Ofgem/DTI believe that it is also appropriate for transmission owners to be responsible for planning and delivering new capital expenditure requirements on their transmission systems. Given that it is proposed to make transmission owners responsible for carrying out transmission maintenance, it is envisaged that by also giving them responsibility for planning and delivery of new investments, this will help to ensure that they can be provided with appropriate incentives to make efficient decisions on when to make new investments and when to undertake maintenance or refurbishment, ensuring a coordinated approach to transmission asset management is maintained. It is anticipated that whilst the underlying responsibility for the new investment planning process would sit with the transmission owners, the GB system operator would have a role in the development of a co-ordinated GB transmission investment plan from the plans of the individual transmission owners. Furthermore, Ofgem/DTI believe that it is necessary to ensure that the planning process adopted provides sufficient assurance that new connections to the transmission system will be managed in an independent, non-discriminatory manner, in particular in the case of connections to the systems of transmission owners with generation and/or supply affiliates. Ofgem/DTI therefore believe that consideration should be given to involving the GB system operator in the new connections planning process in order to help to ensure such independence and non-discrimination.

A3.55 It was noted in the main document that if new arrangements for transmission access are introduced, the responsibilities placed on the SO part of NGC's

Transmission Business would cover a larger range of functions than at present, and that Ofgem intends to consult on the scope, form and duration of an appropriate price control. It is anticipated that consideration will be given to the current proposals for the SO and TO activities of Transco[5] during the consultation process. Ofgem/DTI believe that subject to the outcome of this consultation process, it will be necessary ensure that the detail of the incentive arrangements and responsibilities applying to the system operator and transmission owners under BETTA, particularly in relation to transmission system investment planning, are consistent with any developments in this area. It is noted for example that it is proposed that under the Transco arrangements, the SO is responsible for making the decisions to release incremental capacity volumes at particular locations in response to its investment signals and for arranging with the TO for the delivery of additional investment.

A3.56 Ofgem/DTI believe that it is appropriate for the GB system operator to be the party responsible for contracting with users of the transmission system for connection to and use of the system[6]. Placing responsibility for contracting for connection and use of system with the GB system operator will help to meet criteria 1a and 1b. Under such arrangements, where new entrants wish to connect to and/or use the transmission system their contractual terms would, consistent with international best practice, be managed by a party that was seen to be independent. As noted above, the extent of role afforded to the system operator in the new connections planning process requires further consideration. It is therefore envisaged that transmission owners would be unlikely to need contractual relationships with those connecting to and using the transmission system. Revenues for connection and use of system would be collected by the GB system operator in accordance with a transmission charging methodology proposed by the GB system operator. Transmission owners would derive a revenue from the GB system operator under the SO-TO interface arrangements.

A3.57 Making the GB system operator the single responsible party also avoids the complexities of requiring users of the transmission system to enter into multiple contractual relationships for different services. This is clearly more practical and, because from the perspective of a user of the transmission system, it will be clear

[5] See - Transco's Price Controls and the NTS SO Incentives 2002-7, explanatory notes to accompany the Section 23 notice of proposed changes to Transco's Gas Transmission Licence. Ofgem, April 2002.

that the GB system operator is responsible, this should help to meet criteria 4 and 5.

A3.58 Ofgem/DTI believe that it should be possible to develop a more detailed allocation of functions that permits transmission owners to continue to construct and maintain their own transmission assets without introducing significant conflict with criteria 1a or 1b. It is also possible that such arrangements may provide for efficiencies to be realised in the joint management of distribution and transmission in Scotland to continue to be realised. Again, more detail is required to understand the process, and whilst it is proposed that responsibility for construction and maintenance should fall to the transmission owners, this should be subject to establishing efficient and workable incentive arrangements for both the GB system operator and the transmission owners.

Next steps

A3.59 Ofgem/DTI propose to take forward development of the more detailed split in functions between the GB system operator and transmission owners based upon the high-level allocation of functions set down above. In deciding how more detailed functions should be allocated, it is also proposed that the criteria identified above should be used.

A3.60 It is intended to issue a number of consultation documents as the more detailed allocation of responsibilities becomes defined. It is proposed that work on developing the detailed allocation of functions between the system operator and transmission owners will commence immediately. It is currently envisaged that separate consultation documents will be developed in three different areas: balancing (dealing with the allocation of functions between system operation and transmission ownership to support the discharge of functions and responsibilities covered in Balancing Codes 1, 2, and 3 of the Grid Code); operational planning (dealing with transmission outage planning and maintenance); and transmission investment planning (dealing with new investment). In each case, it is proposed to set out in more detail the steps involved in the process and the alternative options available for allocation within the bounds of the conclusions set down in this document. Each consultation will then provide an analysis of the different options against the criteria identified

[6] It is recognised however that once the detail of the legal framework and associated responsibilities is known, it may be necessary to have some limited form of contractual relationship between the

above. It is currently anticipated that initial consultations on these issues will be published towards the end of August 2002.

A3.61 In parallel, it is proposed that Ofgem will progress the development of the proposed form of regulation of the parties responsible for carrying out the activities of system operation and transmission ownership. This is discussed further in Annex 4 below.

transmission owners and users.

Annex 4: Price controls

Introduction

A4.1 In the December consultation document Ofgem indicated that consideration would need to be given to the appropriate price controls to be applied to transmission owners and to the GB system operator. Ofgem indicated that in both cases, the intention would be not to reopen existing arrangements, except to the extent that any separation of functions makes this necessary. It also raised the issues of whether it would be appropriate to seek congruence of review dates and arrangements for the appropriate treatment of any implementation costs that may arise.

Respondents' views

A4.2 The December consultation document did not address these matters in detail, but a few respondents made comments on them.

A4.3 One respondent recognised that the RPI-X form of regulation may need to be modified and supported the use of output measures in setting price controls and incentives. One respondent wanted to see more detail of the incentive scheme that would apply to the system operator under BETTA, but believed that a 1-year duration would be appropriate.

A4.4 A number of other respondents raised issues relating to the recovery of implementation costs of BETTA. One said that the cost of the reforms required for BETTA must be justified and fully recoverable. It said that the proposed reforms must ensure that the value of the existing transmission businesses is maintained. Another supported the view that the separation of transmission owner and system operator activities could and should avoid the full re-opening of existing (internal cost) price controls and that at an early stage the means of recovery of costs efficiently incurred in the development and implementation of BETTA should be established.

Current arrangements

A4.5 The transmission price control arrangements currently in place are as follows:

Company	Expiry date of current price controls
Scottish Hydro-Electric Transmission Ltd	31 March 2005
SP Transmission Ltd	31 March 2005
National Grid Company plc (NGC) TO SO	 31 March 2006 31 March 2003*

*subject to further review for the period 1 April 2003 – 31 March 2006

A4.6 The total revenues derived by the above companies from transmission system activities are governed by price controls set by Ofgem and enforced through the licences. Currently each of the existing transmission licensees have separate licences. Each licence covers all transmission related functions. In the case of NGC this includes its "balancing services activity", which is separately identified within its licence, and which is separately price controlled. For the Scottish companies, the Ofgem price control final proposals gave indicative revenues for the SO and TO activities, but this split was not implemented in the Scottish licences.

Price controls under BETTA

A4.7 The implications of the allocation of functions between the system operator and the transmission owners will need to be carefully considered in implementing new price control arrangements under BETTA including the basis for financial transactions between each of the parties.

A4.8 It is noted that, in recent price controls, Ofgem has been refining and improving the RPI-X approach so that companies have broadly the same incentives to invest in quality enhancing investments at different points in the regulatory cycle and that such refinements may need to be reflected in the GB system operator and transmission owner controls. The final sculpting of individual controls and incentives will depend on the precise allocation of functions and responsibilities to the GB system operator and the transmission owners

A4.9 There are a number of factors to be taken into account when considering the magnitude of changes to existing price controls and incentive arrangements as BETTA is introduced including:

- Cost analysis

As noted in the last Scottish price control, both the Scottish companies had integrated the management of their transmission and distribution systems under common 'power systems' businesses and clarity on the functions and costs related to GB system operator related activities will be needed. As regards NGC, the GB system operator may have a different scope of functions from those covered by the existing "balancing services activity" as defined in NGC's licence and further work on cost attribution and allocation may be required.

- Developments in form of regulation

  Ofgem intends to consult on the scope and form of an appropriate price control for the SO and TO activities of NGC, consistent with developments in relation to Transco's proposed SO incentive scheme. Any developments in this area will also need to be taken into account when determining the form of the relevant price controls;

- transfer of assets to the GB system operator;
- estimating the costs of GB balancing; and
- any changes to planning and operating standards.

A4.10 The transmission owners will have an interest in their respective price control arrangements and it is also noted that, in coming to an acceptance of any GB system operator price control or incentive regime, the management of that organisation will have an interest in the costs of system operator related activities within NGC and the two Scottish transmission companies. In setting price controls for the GB system operator and for the transmission owners, Ofgem will need to give careful considerations to the financial structure of each business and to the ability of each to finance its functions.

Process and timetable

A4.11 The introduction of a GB system operator in April 2004 will require new (or amended) transmission licences to be in place at that date. The forms of control applicable to each licensee will need to provide the correct incentives on each. The introduction of BETTA and the changes associated with extending the England & Wales CUSC and BSC to GB will introduce a number of significant

uncertainties to the operation of the new price control and incentive schemes and may influence the detailed arrangements.

A4.12 In the longer term there may be regulatory advantages in carrying out all the transmission owner price controls to the same timetable; a possible advantage would be in aligning the costs of capital appropriate to each of the transmission owners.

A4.13 There are a number of ways in which the process of setting the price controls and incentives on the new transmission licensees can be taken forward. The process will need to take into account the arrangements already in place and Ofgem proposes to consult on the options in Summer 2002.

Annex 5: Balancing and settlement

Introduction

A5.1 The December consultation document noted that one of the key components of BETTA is the introduction of arrangements for the wholesale trading of electricity across GB, consistent with the present NETA arrangements in England & Wales. To achieve this, it is necessary to introduce a unified set of trading arrangements across GB for balancing and for settling energy imbalances. It is envisaged that the way in which this will be achieved is through the introduction of a new BSC, using arrangements applying in England & Wales as a basis for consultation, to apply across the whole of GB.

A5.2 One consequence of this will be that there is no longer a requirement for existing transmission licensees separately to balance generation and demand in their respective areas. Instead balancing will be achieved simultaneously across GB, with all generators and demand competing to provide GB balancing services.

A5.3 In Scotland, the current administered prices for top-up and spill will therefore cease to apply. In addition any imbalances of the Scottish host generation and supply businesses will be calculated and settled in an identical manner to other generators and suppliers in GB.

Respondents' views

A5.4 The majority of respondents supported the introduction of a GB BSC. Some respondents were concerned that NETA was not yet proved as a model, or that NETA was not yet fully developed, or that there were specific aspects of NETA that would require special consideration in Scotland.

A5.5 Concerns were also expressed that interim developments to the BSC in England & Wales, before the implementation of BETTA, would not be assessed against objectives that took into account their eventual application across GB.

A5.6 More than one respondent expressed concern that the Scottish companies do not have a voice on industry panels except through any England & Wales interests they may have and also that there may be interested parties in Scotland who are

not parties to the BSC. In particular, one was concerned about the effect that any changes in the arrangements for charging losses would have on Scotland.

A5.7 Some responses noted areas that they thought still required development under NETA including: treatment of constraints on distribution networks; transmission network failures; rules for trading across interconnectors; demand-side participation and the treatment of small generators and those with unpredictable output.

A5.8 Further matters raised included: differences between NETA and the current Scottish arrangements which allow ex-post notification of contracts; issues surrounding the treatment of cascade hydro; and the current form of Moyle interconnector trading and in particular the ability for within Gate Closure services to be provided across the interconnector in both directions.

A5.9 Most respondents supported the use of existing England & Wales BSC systems with minimum change. They noted that major generators and suppliers in Scotland have already invested in such systems but there are some players who have not and these will need to be considered in setting implementation timescales. Most thought that the impact of extending central systems would not appear to be great but there may be a significant volume of detailed work that would benefit from the establishment of an expert group. Respondents also noted that much of the Scottish SVA arrangements[7] were based on the England & Wales 1998 rules but some differences were introduced at the time and not all subsequent England & Wales changes have been mirrored in the Scottish arrangements.

A5.10 One respondent noted that to facilitate balancing and system operation, the NETA systems for receiving and processing market information, despatching tools and balancing services systems would need to be extended or replaced. Also, that control room facilities would need to be extended and that the GB system operator would require new systems to accommodate transmission owner information. It noted that the cost of central system developments could be expected to be material and Ofgem should establish an appropriate recovery mechanism.

[7] Supplier Volume Allocation (SVA) arrangements relate to the calculation of non half-hourly metered demands.

A5.11 Several respondents noted that 132kV assets are classified as transmission assets in Scotland and distribution assets in England & Wales, and that this would have implications for: metering requirements; treatment of losses; transmission charging and the treatment of small generators, particularly cascade hydro. One respondent stated that this would not be beneficial for generators connected at 132kV in terms of access to embedded benefits and equivalence with generators connected at 132kV in England & Wales. One said that the existing definition of the transmission boundary in Scotland distinct from that in England & Wales should be retained as changing the boundary would cause significant costs and it was necessary to include the 132kV network in planning studies. Another noted particularly the implications of the definition of transmission on losses.

A5.12 Another respondent suggested that retaining the 132kV definition as a transmission voltage seriously reduces the scope for economic operation of generation embedded at 33kV or 11kV as many will need to use the 132 kV system to gain access to their customers, thus incurring TNUoS charges, which would not apply in a similar situation in England & Wales. A solution suggested was that all 132 kV systems in GB are defined as distribution but certain 132kV lines in really remote areas could be regarded as sub-transmission which would be treated as distribution for trades entirely under the 275/132 kV GSP and as transmission for others parties such as large generators. Another respondent said that a common approach to the voltage split would have been preferable but it may be pragmatic and sensible to identify and classify certain Scottish (e.g. 132KV) lines as being transmission rather than distribution assets. The split between transmission and distribution will have to be clearly defined as it impacts on the general subject of transmission access and losses which forms an integral part of BETTA.

A5.13 One respondent noted that the metering installed at many Scottish generator connection points is not currently compliant with settlement or ancillary service requirements and that installing compliant metering at such points might have a significant financial impact on the Scottish companies.

Ofgem/DTI views

A5.14 Overall, respondents supported the proposal that the BSC forms an appropriate basis for developing GB-wide trading arrangements.

A5.15 While there were comments from a small number of respondents that NETA is not yet proven as a model, it should be noted that Ofgem's analysis[8] of trading under the first 3 months of NETA found that the new trading arrangements had resulted in real and sustainable benefit to consumers. Furthermore, it is now over a year since the introduction of NETA and Ofgem is of the view that the trading arrangements have continued to work well and, as borne out by the majority of respondents, considers that NETA is the appropriate model to use for the introduction of GB-wide trading arrangements.

A5.16 In developing a GB BSC there will be consultations on any issues arising from the application of the England & Wales BSC across GB, and on possible differences between a GB BSC and the England & Wales version that might have to be considered as a consequence. This will provide an opportunity to identify whether there are any circumstances in Scotland that warrant special consideration and if so what such circumstances are and their appropriate treatment under a GB BSC.

A5.17 There are concerns about changes to the England & Wales BSC in the period between now and the implementation of BETTA, and the transition to the GB BSC. This issue is discussed further in Section 5 of the main document.

A5.18 The development of the GB BSC will need to take into account various initiatives underway which may change the England & Wales arrangements:

- the Distributed Generation Co-ordinating Group is considering the treatment of constraints on the distribution network;
- the treatment of licence exempt generators was considered by the Consolidation Working Group and, as a result, two modifications to the BSC have been approved; and
- the development of demand-side participation is under consideration by the Demand Side Working Group.

A5.19 Ofgem/DTI note the support for extending the BSC systems used in England & Wales and the desire to minimise disruption and development costs for participants. In doing this consideration needs to be given to those participants who are not currently active in the England & Wales market and who still need

[8] The New Electricity Trading Arrangements, A review of the first three months. Ofgem, August 2001.

to develop facilities to enable them to participate. It will be necessary to assess the compliance of metering in Scotland with requirements under a GB BSC.

A5.20 Regarding concerns over the definition of 132kV assets as transmission in Scotland but distribution in England & Wales, Ofgem/DTI do not intend to change the current legislative definition of high voltage lines in England & Wales and in Scotland. The position of small generators in the BSC and with respect to transmission charges is determined by a number of things including: transmission charging methodology; plant size; licence exemption and certain BSC definitions (GSP Group, Balancing Mechanism Unit and Trading Unit) and metering requirements. Any perceived inequities that result may be addressed, if it is considered appropriate to do so, by changes to relevant documents, such as the BSC.

The implications for SESL and ELEXON

A5.21 The December consultation document noted that at present, the settlement system in England & Wales is managed by ELEXON and that settlements in Scotland and the administration of the Settlement Agreement for Scotland (SAS) is the responsibility of Scottish Electricity Settlements Ltd (SESL). Under BETTA, some of the ELEXON and SESL systems would need to be enhanced or replaced as new systems consistent with the requirements of a new BSC are introduced.

Respondents' views

A5.22 Respondents saw advantages in combining the ELEXON and SESL roles. Some stressed the desirability of early involvement of these parties in the process; some suggested that there may be a significant volume of issues to be progressed.

A5.23 Respondents noted that in Scotland, the settlement role is split with SESL carrying out the analysis to determine energy volumes transferred between parties and the SAS party companies carrying out the financial settlement processes. Respondents noted that wind up and handover issues would need to be considered for both functions and that run-off services will be needed to complete the settlement processes in Scotland for trading periods prior to the introduction of BETTA.

A5.24 One respondent noted that parties in England & Wales had to write off sunk costs in Pool systems and invest in NETA systems without recourse to stranded cost recovery. Others mentioned the need for recovery of outstanding Scottish costs relating to the introduction of full retail market competition from 1998.

Ofgem/DTI views

A5.25 It is intended to involve SESL and ELEXON at an early stage in the development of BETTA and, as stated in the December paper, Ofgem will work closely with SESL and ELEXON in the analysis of the issues associated with run-off of SAS and to ensure an appropriate handover of functions and responsibilities. Ofgem is conscious of the current legal constraints on ELEXON activities in its capacity as BSCCo under the England & Wales BSC, but is aware that there could be benefits from the early involvement of ELEXON.

A5.26 The existing BSC sets out how certain costs related to England & Wales arrangements such as central development costs are recovered. The GB BSC may be an appropriate vehicle to recover run-off costs and outstanding settlement costs related to the existing England & Wales arrangements but this will require further consideration. Work is being carried out on the identification of these and other costs, as well as consideration of who should pay the costs, and these matters will be consulted upon in due course.

Related matters

A5.27 The December consultation document also invited views on any other matters related to GB balancing and settlement. The following matters were raised in responses to the consultation.

Respondents' views

A5.28 One respondent noted that the size of generation plant that would have to be licensed has not been addressed. Several respondents noted that whilst they wished trading arrangements to be improved in both the short and long term that interim changes to Scottish trading arrangements should be cost effective and not distract from BETTA.

A5.29 Several respondents mentioned the need to co-ordinate with the work of other initiatives such as the Demand Side Working Group and the Energy Policy Review.

Ofgem/DTI views

A5.30 Ofgem/DTI note that the effect of the current generation licence exemption regulations in Scotland are different from those in England & Wales but consider that this matter is not within the remit of BETTA.

A5.31 In so far as respondents' express views about interim changes in Scotland, those will be taken into account in as far as they may be relevant considerations for BETTA against the background of Ofgem's principal statutory objective.

A5.32 Ofgem/DTI believe that it is entirely appropriate for other initiatives to progress in parallel with BETTA but believe that it would not be appropriate to constrain either those initiatives, or the BETTA project, by requiring too close an integration between them.

Annex 6: CUSC and transmission access charging

CUSC

December consultation document

A6.1 The December consultation document noted that one of the key features of BETTA is the implementation of a single set of contractual arrangements for access to the transmission system, based substantially on the CUSC in place in England & Wales. It is envisaged that the way in which this will be achieved is through the introduction of a new CUSC to apply across the whole of GB.

A6.2 An important component of this is the implementation of a single set of charging arrangements for connection to and use of the GB transmission system, based upon the transmission charging arrangements in place in England & Wales, taking into account any issues arising in the application of those arrangements across GB.

A6.3 A change in the treatment of existing interconnector assets between Scotland and England & Wales was also proposed in the December consultation document. Under a single GB market the Scotland-England Interconnector would become part of the transmission system assets.

Respondents' Views

A6.4 There was widespread support for extending the England & Wales CUSC to GB with the attendant benefit of a single set of charging and access arrangements. Respondents noted the dependency of the form of CUSC on the allocation of responsibilities between the system operator and transmission owners and the associated licensing arrangements. Various forms were suggested depending on the respondent's preferred model. Some thought that the GB CUSC should be split into separate documents either geographically or functionally. Some respondents highlighted detailed contractual issues that might need to be addressed if the CUSC provides an interface between users and the system operator and transmission owners, for example issues such as creditworthiness, default arrangements and liabilities. One respondent commented that the complexity of the CUSC would increase as you move away from a deep system operator model due to increased complexity across the system operator and

transmission owner interfaces. Most welcomed the idea of a single, GB document covering transmission access and charging arrangements.

A6.5 One respondent commented that the adoption of a harmonised approach to contractual arrangements could bring with it a degree of inflexibility and that due consideration should be given to whether sufficient flexibility could be provided to accommodate the diverse conditions that will be encountered across GB.

A6.6 Respondents identified the need for a document governing the relationship between the system operator and transmission owners. Separately some respondents commented on the possible need for a document governing the interfaces between transmission owners also. The need for the ability to change these documents consequent upon changes to the GB CUSC was also identified.

A6.7 One respondent considered that the CUSC Amendments Panel may need to have transmission owner representation. Another stated that the transmission owners need to continue to have a contractual and charging relationship with customers.

Ofgem/DTI views

A6.8 Ofgem/DTI note the support for a single CUSC to apply across GB and agree that this should be the basis for further work. Proposals for the arrangements that should be embodied in the CUSC to apply across GB will be brought forward for consultation.

Harmonised connections policy

December consultation document

A6.9 The December consultation document restated Ofgem's vision to standardise connection arrangements across GB through BETTA.

A6.10 It was noted that there were different connection charging policies applied by the three transmission licensees. The policies of SP Transmission Ltd and NGC could be characterised as "shallow", in essence meaning that the connectee is charged solely for the costs of connecting to the local transmission network, with associated reinforcement costs being recovered from all network users.

A6.11 In the past, Scottish Hydro-Electric Transmission Ltd (SHETL) has applied a "deep" connection charging policy. However, Ofgem has recently proposed[9] new connection and charging arrangements for the SHETL system. Under Ofgem's proposals new generators will only be charged for the cost of connecting to the transmission network, with any costs associated with system upgrade as a result of the new connection being passed to all new generators on the SHETL network through transmission use of system charges.

Respondents' views

A6.12 A number of respondents supported the adoption of a single connection policy for GB based on the shallow charging approach. One said that it would introduce much needed transparency in this area. Two supported deep connection charges and one shallow with the option for deep connection charges in specific circumstances.

A6.13 One respondent noted that the proposed Electricity Safety, Quality and Continuity Regulations will impose duties on the transmission owner. They may also impose duties on the system operator and there must be clear responsibilities assigned. The regulations will also require the consent of the transmission owner to all new connections even if the system operator is responsible for such connections.

Ofgem/DTI views

A6.14 There is general support for a single connection policy based on shallow charging and shallow connection charging arrangements, based on current England & Wales arrangements, will be proposed in due course under BETTA.

A6.15 Ofgem/DTI will consider the impact of the proposed Electricity Safety, Quality and Continuity Regulations as the system operator/transmission owner roles are developed.

A6.16 Further analysis may indicate that some detailed changes to the connection charging polices in the three transmission owner areas may be appropriate in harmonising the arrangements under the GB system operator.

[9] Connection and charging policy for new generation by Scottish Hydro Electric Transmission Limited: A final proposal document, Ofgem, March 2002.

Harmonised transmission access and charging

December consultation document

A6.17 The December consultation document reiterated that under BETTA it is envisaged that there will be a single set of transmission charging arrangements applied consistently across GB. It was proposed that when BETTA is implemented, the transmission access regime then applying in England & Wales would be applied across GB.

A6.18 The December consultation document noted that in May 2001[10] Ofgem issued a consultation document on proposed changes to charging arrangements for transmission access and transmission losses in England & Wales. Subsequently, in February 2002, Ofgem published revised proposals for transmission access and losses under NETA[11]. The revised proposals are outlined below.

A6.19 In the December consultation document, Ofgem recognised that introducing a single GB transmission access regime based on CUSC would raise a number of issues, and that it will be necessary to consult upon these in due course.

A6.20 It will also be necessary to consider the impact on generation and demand of amending the treatment of the interconnector and creating a GB BSC and CUSC, and to understand the implications that these have for the transmission access arrangements to apply under BETTA.

Respondents' views

A6.21 Most respondents noted that they were awaiting the proposals for England & Wales transmission access. Most thought that these proposals should be considered in the context of extending those arrangements to Scotland. One respondent stated that they did not wish Southern customers to pay more because of BETTA. Two respondents commented that the extension of the current Investment Cost Related Pricing (ICRP) charging arrangements would be inappropriate or extremely damaging to renewables and that any charging arrangements for GB should be able to balance the needs of all stakeholders, as well as the requirement to develop a network that will facilitate Government policy for renewable energy.

[10] Transmission access and losses under NETA, Ofgem May 2001.
[11] Transmission access and losses under NETA, Revised proposals, Ofgem February 2002.

A6.22 Several respondents were concerned about the impact on generators of introducing revised proposals for charging for transmission losses to Scotland. One respondent was of the view that transmission access reform in England & Wales should not be a pre-requisite for introducing BETTA and that unless there is a demonstrable cost-benefit, transmission losses should be averaged.

Ofgem/DTI views

A6.23 It is recognised that respondents consider that clarity on the transmission access and charging arrangements that will apply across GB under BETTA is important. At the time of the December consultation document, respondents were awaiting Ofgem's further proposals on transmission access and losses in England & Wales.

A6.24 It is also recognised that some respondents have concerns about the application of England & Wales arrangements to Scotland and GB and that the impact of extending the arrangements will need appropriate consideration.

Ofgem's Revised proposals for transmission access and losses under NETA

A6.25 In order to take this forward Ofgem has set out proposals below.

A6.26 On 26 February 2002, Ofgem published revised proposals for the treatment of transmission access and losses under NETA[12]. This document sets down Ofgem's current view of how transmission access and transmission losses should be treated under NETA. In this document, Ofgem reiterated its view that reform of these arrangements was appropriate, although in light of concerns expressed in response to Ofgem's May 2001 consultation on these issues Ofgem has considered whether the policy objectives of providing effective short and longer-term locational signals can be met through less complex and costly approaches, and proposed a number of simplifying changes that should help to achieve this.

A6.27 Ofgem's proposed reform of transmission access set out in the February consultation is based on the creation of financially firm, tradable rights for use of the transmission system for both generators and consumers. Ofgem believes that the introduction of firm rights will bring immediate benefits to system users as it will reduce the risks associated with failures of the transmission system to users. It will also enable the creation of appropriate incentives on NGC to invest in

[12] Transmission Access and Losses Under NETA, Revised Proposals, Ofgem, February 2002.

system reliability. Finally, it will promote greater choice and innovation in the services that NGC offers users (by enabling the development of, for example, interruptible use of system rights).

A6.28 The reforms also incorporate proposals for a revision to the incentive arrangements applying to NGC to provide new transmission capacity. These are directly analogous to, and complementary to, Ofgem's proposed new capacity investment incentives for Transco's National Transmission System (NTS)[5].

A6.29 Ofgem indicated that it had also reconsidered its views on transmission losses as a result of concerns raised during the May 2001 consultation. A number of respondents argued that charging for losses on the basis of locational marginal losses would provide unduly strong and potentially unstable price signals to participants and would overstate the actual costs of transmission losses. In light of these concerns, Ofgem has examined whether the scaled marginal loss approach previously proposed by the Pool might be more appropriate than the full marginal loss treatment proposed in the May document. This scheme can be thought of as an average zonal losses approach and Ofgem now believes that the Pool proposals should form the starting point for discussions on reform of losses charging.

A6.30 It is recognised that there are still a number of issues of detailed design that will need to be discussed and addressed. Ofgem has set out, at a high level, its current preferences for new access and losses arrangements to facilitate discussions, and it is anticipated that these discussions will allow all interested parties to make representations and shape the proposals.

A6.31 Detailed discussions have already begun through the processes by which modification proposals to the BSC are considered[13]. In relation to changes effected through CUSC, the Transmission Access Standing Group was established by the CUSC Panel on 22 March 2002 to consider such issues. Ofgem believes that new losses arrangements, based on the Pool scheme, could be implemented in a matter of months as the NETA central systems were designed to accommodate such changes. Transmission access reform may take longer, as there are more detailed discussions to be held to resolve design issues.

[13] The relevant proposals are BSC Modification Proposal P75 "Introduction of Zonal Transmission Losses" and BSC Modification Proposal 82 "Introduction of Zonal Transmission Losses on an Average Basis"

There will also be longer lead times associated with developing NGC's systems and contractual framework.

Implications for BETTA and the way forward

As noted in Section 5 of the main report, if a modification proposal is raised against the BSC and/or an amendment proposal has been raised against the CUSC which is designed to introduce revised arrangements for transmission access and losses charging in England & Wales then it will be necessary to consider the impact on BETTA as part of the proposed parallel consultation process. Prior to the BETTA project consulting upon the charging arrangements to be applied across GB, Ofgem will review the timetables published by the BSC and CUSC panels respectively, to identify the process that those panels intend to follow to consider these specific modifications and their planned dates for providing to the Authority their recommendations on these modifications. At that time Ofgem will consider the implications that these timescales have for developing GB transmission charging arrangements and the process and timetable that the BETTA project should follow in developing those arrangements.

Related matters

A6.32 The December consultation document also invited views on any other matters related to a GB CUSC and GB transmission access and charging. The following matters were raised in response to the consultation.

Respondents' views

A6.33 All respondents who commented, agreed that the Scotland – England interconnectors should be treated as part of the GB transmission system. Most respondents considered that the capacity of the interconnector would be adequate for the first few years but that new infrastructure would be required in the longer term to avoid significant transmission constraint costs. One respondent thought that urgent work would be required to the England & Wales system to provide an unconstrained network. One respondent thought that the interconnector assets should be entered into the transmission companies' regulatory asset bases at a value consistent with current arrangements. One respondent was concerned that long-term contracts for access should not be allowed in the interim.

Ofgem/DTI views

A6.34 Ofgem/DTI conclude that it is appropriate to include the Scotland–England interconnector as part of the GB transmission system for access and charging purposes. It will be necessary to determine the appropriate regulatory asset value of these assets as part of the process of determining the price controls to apply to the relevant transmission owners under BETTA.

Annex 7: System security and quality of supply standards

Introduction

A7.1 The December consultation document noted that the three transmission systems in GB are currently planned and operated to comply with different system security and quality of supply standards. The paper gave a brief summary of the applicable standards, and raised a number of issues in relation to the appropriate application of the standards following the introduction of BETTA. It also considered briefly the issues associated with implementing a single GB Grid Code and non-connected island systems.

A7.2 The December consultation document noted that there are differences in the definition of transmission assets between England & Wales and Scotland. This issue is addressed in the section on Balancing and Settlement above.

Security and quality of supply standards

Respondents' views

A7.3 Respondents expressed a range of views with respect to conforming planning and operational standards as part of BETTA. A number were concerned about any potential cost impact and benefits to customers. One said that England & Wales customers should not be asked to subsidise increased standards in Scotland. When considering remote regions one said that a uniform security standard could have significant financial consequences for minimal benefits, and another that full compliance would be economically impractical.

A7.4 One respondent suggested that Scottish standards should apply across GB since the weather is less clement in Scotland than in England & Wales and their operating standards have held them in good stead.

A7.5 Several said that standards should be unified (to England & Wales standards) but use should be made of derogations where external influences prevent necessary reinforcement or on a time limited basis. One respondent mentioned the importance of security standards to nuclear safety cases.

A7.6 One respondent noted that relaxing England & Wales standards would increase the capacity of the interconnector. Another respondent noted that different

security standards would lead to different treatment between England & Wales and Scottish generators.

A7.7 One respondent said that there is little difference between National Grid's Security and Quality of Supply Standards and those applied in Scotland, and considered that planning and operational standards under BETTA should conform to these since it is difficult to justify adopting different levels of security on what would effectively be a single integrated transmission system. It regarded the current England & Wales standards as the most appropriate standards for the GB transmission system because they were the product of an extensive consultation with National Grid's customers, consumer groups, Ofgem and others and considered it inappropriate to move away from these without a similar consultation process. It did not believe that such conformance of standards would result in any significant non-compliance issues or any material increase in constraint costs over and above those that would occur under application of the current regional standards.

A7.8 Another respondent said that there was no underlying requirement as a consequence of BETTA to unify planning and operating standards across the three transmission owners and there would potentially be significant costs and inefficiency associated with attempting to do so. For good reasons, the transmission network in the north of Scotland is not planned or operated in the same manner or to the same standards as the transmission network in England & Wales, and the underlying factors that have driven this difference will largely remain. Another respondent said there is no evidence that customers are disadvantaged by the existing standards and that moving away from these to unified arrangements would either involve considerable expense or stranded assets.

Ofgem/DTI views

A7.9 Given that the objective of BETTA is to introduce a set of GB wide arrangements, it might be preferable for these arrangements to include a harmonised set of planning and operational standards. Nevertheless, it would be appropriate that any conformed standard would take geographical, climatic and economic factors into account. It is to be expected that complying with such a conformed standard would not involve unwarranted investment.

A7.10 Conversely, whether it would be untenable to operate with different standards applying to the transmission system of each transmission owner, might be dependent on the detail of the allocation of functions between the system operator and transmission owners. A single licensee having to operate to different standards in different parts of the network might be problematic, whereas it might be more acceptable if each licensee had to operate to a single standard albeit one which might differ from another licensee.

A7.11 However, were there to remain any discrimination in the access to the system as a result of differences in standards this could be regarded as a distortion to competition and would need to be addressed.

A7.12 Ofgem/DTI thus believe that further work is required to analyse the differences in standards and hence to determine the standards that should apply.

Single Grid Code

Respondents' views

A7.13 There was support for the harmonisation of the Grid Code, although to differing degrees. One respondent said that a single GB Grid Code is not essential for BETTA and the existing Grid Codes can be harmonised in due course using the existing governance arrangements of the individual codes.

A7.14 One respondent envisaged having a GB Grid Code with 3 area specific sections covering technical and commercial issues corresponding to the three licensed areas. Another suggested there may be greater benefit from selecting the best aspects of all the existing codes.

Ofgem/DTI views

A7.15 Ofgem/DTI consider that a single Grid Code is preferable and will progress this in the BETTA project. Ofgem/DTI note that, as a minimum, a single set of balancing codes will have to apply across GB if there is to be a single GB balancing mechanism. It is for further consideration whether other aspects of the Grid Code should be common across GB, or whether differences should be retained to reflect technical differences between the current Grid Codes in England & Wales and Scotland.

Shetland systems

A7.16 Few respondents expressed a view on the arrangements that should be adopted in the Shetland Isles. One respondent thought that as the Shetland Isles are not physically connected to the main system, and only one generator can provide balancing services, that the existing arrangements should persist, whereby the distribution system operator balances the Shetland System. Another respondent believed that the current incumbent should continue to operate the system. Two respondents thought that it was inappropriate for BETTA to apply to island systems.

A7.17 Ofgem/DTI will consider further the treatment of the island systems and their inclusion in the GB BSC.

Annex 8: Legal framework

December consultation document

A8.1 The framework for BETTA set out in the December consultation document was based on the application of the trading and transmission access arrangements in England & Wales to the whole of GB. This entails the development of a number of new or revised entities, documents and associated support systems as follows:

- a single licensed GB system operator, separate from generation and supply interests;
- licensed transmission owner activities;
- a GB BSC, incorporating a single balancing mechanism and energy imbalance arrangements;
- a GB CUSC,; and
- common governance of technical arrangements.

A8.2 The December consultation document set out the key legal tasks, apart from support to the legislative process, which will need to be undertaken to implement BETTA:

- the creation of a single licensed System Operator activity including the definition of its powers and the appointment of that System Operator;
- the establishment of three licensed transmission owner activities;
- the establishment of a GB BSC to be designated;
- the establishment of a GB CUSC to be designated;
- the amendment of other relevant codes and relevant contracts, or the creation of new documents, such amended or new documents to be aligned both with each other and with other relevant codes such as the BSC and the CUSC, these amended or new documents to be designated in licences; and

- an obligation to sign underlying multiparty contracts giving the BSC and CUSC contractual force.

Respondents' views

A8.3 Those who commented on the issue supported the intention to implement BETTA through primary legislation. One party noted that such powers should not be sought until the costs to all GB parties is demonstrated.

A8.4 A respondent had concerns that primary legislation would be broad based giving regulatory authorities power to introduce unlimited changes to Scottish trading arrangements, and believed that any legislation would need to be very narrowly and tightly defined to afford the minimum powers necessary to introduce the revised arrangements.

A8.5 A respondent said that the most efficient and practical mechanism for implementing a number of the BETTA proposals was by way of primary legislation. A particular issue raised was whether the proposals affected property rights.

A8.6 Another commented that the legislation should be limited in scope to that required to deliver BETTA. One respondent raised additional considerations relating to the process for transition from the current set of arrangements to the new legal framework under BETTA, and the implications that this would have for the population over which legislative powers would need to be exercised.

A8.7 A respondent noted that the distinctive nature of the Scottish legal framework needs to be considered. Another respondent commented that it was not clear from the consultation whether the Scottish Parliament had any vires over the process to implement BETTA, and if not, how their views will be represented, and another noted that in introducing a GB legal framework for trading and transmission arrangements and in putting in place arrangements that seek to transfer existing contracts and/or assets, differences between English and Scots law would have to be considered.

A8.8 A number of respondents mentioned the importance of the appointment of the system operator. One said that the method of appointment of the system operator will need to be carefully considered and may require a competitive tender. Another respondent commented that the process for appointment of the

system operator should be progressed as a priority, so that potential bidders for the system operator role have adequate time to prepare, and the opportunity to be involved during the design phase of BETTA.

A8.9 One respondent thought that the split of licence conditions and obligations between the system operator and transmission owners should come under the legislative powers but that subsequent amendments would then need to be implemented through the normal licence amendment process.

A8.10 Another respondent said that the legal measures to be put in place as part of BETTA should include the means by which the Government can if necessary require timely termination of the restructuring contracts in the absence of consensus. A further respondent suggested that as part of the package of BETTA reforms, a recovery mechanism should be provided for any stranded costs that might arise, including those arising under the restructuring contracts, and that the cost recovery mechanism should recognise that the BETTA reforms are designed to benefit all customers in Great Britain. Another respondent, while noting that the restructuring contracts are likely to require amendment, said that Ofgem should not be directly concerned with this.

A8.11 One respondent noted that the GB BSC is to be designated and operated in parallel to the England & Wales BSC, and that there may be a need in the period close to Go-live to align the then current England & Wales BSC and the GB version in the event that the two have diverged. The BSC subsidiary documents will also need to be extended to Scotland. This respondent commented that clarity is needed on who is to undertake and pay for the detailed assessment of the legal implications for the GB BSC, associated contracts and processes.

Ofgem/DTI views

A8.12 Ofgem/DTI accept the views of respondents on the scope of legal powers under the BETTA Bill and intend that the provisions of the Bill are directed narrowly at adequately addressing those legislative changes which are required to the existing legal framework to deliver BETTA and to provide for any new legal provisions which are consequent to the introduction and delivery of the BETTA proposals.

A8.13 DTI/Ofgem support this basic proposition also in relation to property rights affected by the BETTA proposals and as explained earlier in this paper only those

assets which are required to support the functions of the new GB system operator to be created by the BETTA proposals will be the subject of any transfer scheme pursuant to the Bill.

A8.14 A number of respondents have raised the issue as to which law, Scots or English, would be the applicable law governing any new GB arrangements that would be put in place to deliver BETTA. This is not believed to be a matter for the BETTA Bill but will be reviewed and consulted upon when the detail of the underlying codes and/or contractual documents are worked through. Its outcome will depend on the nature of the framework arrangements.

A8.15 Ofgem/DTI agree that the appointment of the system operator is important to the BETTA vision. However a GB system operator (and other central service providers) cannot be appointed until the relevant legislation has been passed, as until then no legal basis exists for such appointment. In preparation however Ofgem/DTI wish to consult upon the process by which any appointment decision will be reached and the criteria that will be used for deciding who is best placed to fulfil this role.

A8.16 Ofgem/DTI believe that any treatment of the restructuring contracts in Scotland fall outside the direct scope of the BETTA reforms.

A8.17 Ofgem/DTI believe that a key component of the delivery of the BETTA project is the work to develop the key legal documents and the intended processes for that are explained in chapter 5 of this paper.

BETTA legislation

A8.18 The December 2001 BETTA consultation paper suggested that primary legislation would be sought to introduce BETTA. The Government has recently announced the intention to bring forward legislation to provide the legal foundation for BETTA when Parliamentary time allows[14].

A8.19 A number of respondents to the December 2001 consultation paper expressed the view that the legal powers taken under any new legislation should be no wider than those necessary to deliver BETTA. This is the intention of any legislation.

[14] See Hansard, 15th April 2002 Official Report Column 748W

A8.20 At this stage given that the detailed legal structure of the arrangements for BETTA are under development it is not possible to be specific about the precise nature or extent of the legislation required to deliver BETTA. However, broadly speaking the provisions presently contemplated will have to address the following issues in order to give effect to BETTA:

- amendment to the Electricity Act 1989 so that both the activities of system operation and transmission ownership are licensable and any consequential changes that may be necessary;
- the power to licence a GB system operator and the owners of transmission assets;
- the need to change existing industry documents and where necessary the introduction of new documents, including a GB BSC, GB CUSC and GB Grid Code;
- the transfer of certain necessary assets, where appropriate, to the system operator; and
- transitional arrangements required to implement BETTA.

Way forward

A8.21 The intention is that changes to the existing legal framework to deliver BETTA, involving such matters as licences and codes and implementation scheme for BETTA, will be considered in further detail as part of the ongoing consultation process and views will be invited at the appropriate time.

Annex 9: Project plan, industry consultation and project organisation

Project plan

A9.1 In the December consultation document, key elements of the project plan were described. These included:

- the assumption that Parliamentary time will be available in the 2002/03 session, leading to appropriate legislation by July 2003;
- further work leading to a more precise definition of the allocation of functions between the system operator and transmission owners by the middle of 2002, allowing drafting of licences and final drafting instructions to be commenced thereafter;
- the development of several associated strands of work, such as the arrangements surrounding planning and operating standards (whether conformed or otherwise), transmission cost recovery issues associated with a GB transmission charging and access regime, GB balancing and settlement arrangements and the appropriate legal framework for BETTA;
- in early 2003, when a clear picture of the details of BETTA has emerged, work on the changes to computer systems that will support the new arrangements; and
- final consultation on licences and subsequently on codes taking place in 2003, with the intention to designate the new codes, and to introduce the new licences in September 2003.

Respondents' views

A9.2 In general respondents supported the proposed plan, and several welcomed the target date of April 2004. A number commented that this was contingent upon seeing more detail. Some were concerned at the period of time until the new arrangements were put in place, although none challenged the conclusion that this was necessary in the light of the legal advice regarding the requirement for legislation to implement BETTA. Two respondents thought that the timetable was challenging, and others agreed with the comment in the December consultation document that further work was needed, especially involving potential central service providers, to confirm the assumptions about the degree of system

development work necessary and the associated timescales for its completion. One respondent said that once a more detailed plan was produced, then this should be discussed in open forum with the industry.

A9.3 Five respondents said that they thought it important to develop a realistic timetable and then to adhere to it. One of these said that major changes to the plan at a late stage should be avoided, and another said that the timetable must be realistic so as to avoid the potential for nugatory work. One commented that it was important to focus on the overall objective and avoid getting delayed by relatively minor details. Another made a similar comment, advocating pragmatism over perfection, and another argued that the focus should be on the major principles, with necessary changes to detail being picked up afterwards through the modifications process.

Ofgem/DTI views

A9.4 Although a small number of reservations as to the practicality of the plan were expressed, Ofgem/DTI welcome the view of most respondents that the outline plan set out in the December consultation document was a suitable basis for further work. Ofgem/DTI also accept that such work has to involve parties such as potential central service providers, and that the aim should be to drive as hard as possible for an April 2004 implementation, where necessary leaving some matters of detail to be resolved later where this does not impact significantly upon participants.

A9.5 Whilst noting that further detailed work is required, a summary plan is being prepared in the light of responses to the December consultation document and in light of further thinking by Ofgem since the December consultation document was issued.

Industry consultation

Form of consultation

A9.6 The December consultation document set out a number of proposals on consultation as the BETTA project moves forward. In particular:

- an industry wide Steering Group was not felt to be appropriate;

- instead reliance would be placed on the normal mechanism of consultation, i.e. a mix of consultation papers, seminars and meetings with interested parties;
- one or more expert groups would need to be established; and
- at a later stage, an Implementation Managers Forum would be established if there was sufficient industry interest and were it felt that such a forum would be useful.

Respondents' views

A9.7 There were a number of responses on various aspects of the consultation proposals. Seven respondents wished to see a greater degree of industry involvement than set out in the December consultation document, although another welcomed the suggestion for a normal consultation process instead of what it described as an 'insiders' steering group. Several respondents welcomed the concept of expert groups, and expressed interest in participating in them. One said that an Implementation Managers Forum was not enough to ensure meaningful involvement by industry participants, and another said much the same, noting that the Forum would only be involved in the implementation of proposals rather than their development in the first place.

Ofgem/DTI views

A9.8 Ofgem/DTI recognise the need to involve industry members to the fullest extent possible in the further development of the BETTA project. Although some policy questions remain to be resolved, the main focus of further work is on applying arrangements in England & Wales across GB and the associated implementation issues that arise. This means that consultation arrangements appropriate for those circumstances need to be devised. In general, Ofgem/DTI believe that it is appropriate to rely on the normal mechanisms of consultation to take forward the BETTA project. The various means of consultation are to be as follows:

- consultation papers will be issued from time to time, first as matters are developed to stages appropriate for consultation, and subsequently as detailed changes to relevant documents are identified. Section 5 of the main document gives further details on these consultation processes;

- seminars will be held at key stages, to determine views generally and to describe how matters are being taken forward. The first of these will be held in June 2002 and further details are given later in this section;

- expert groups will be convened to progress particular topics, and further thinking on this point is presented later in this section; and

- at a later stage, if the need is apparent, an Implementation Managers Forum, similar to that set up under the NETA Programme, will be established.

Proposals for an expert group

A9.9 The December consultation document noted that it was important to obtain access to industry expertise and that one or more expert groups would be appropriate. Initial thinking was for one group, to focus on issues associated with the allocation of functions between system operation and transmission ownership, transmission access and charging, standards and conformance.

Respondents' views

A9.10 Five respondents commented specifically on expert groups, and all were supportive of the proposal. One suggested that, as well as the group proposed, there was a need for an expert group to consider issues associated with settlement. Two said that the remit of the groups needed to be on a GB basis, and one expressed concern that the expert groups previously established, under the workstreams established after the August 2000 consultation paper, had too narrow a membership.

Ofgem/DTI views

A9.11 Ofgem/DTI remain of the view that appropriate expert groups can add value to the work of the BETTA project. These groups are primarily for the discussion of detailed technical matters, rather than consideration of policy matters and will not be used as a consultation forum. For this reason, Ofgem/DTI wish to ensure that the composition of the groups is appropriate. It is therefore proposed to focus group membership on those with relevant technical skills. From time to time the results of the work of the groups will be incorporated in relevant consultation papers.

A9.12 As described in the December consultation document, one expert group is envisaged to provide technical advice required for Ofgem/DTI to develop their thinking further on the detailed allocation of functions between the system operator and transmission owners. This group will be comprised of experts in transmission matters, which is likely to limit participation to the three transmission licensees in GB.

A9.13 Ofgem/DTI accept the need also to have an expert group dealing with settlement and implementation matters. At this stage it is envisaged that the group would focus on issues relating to the various systems that comprise settlement, what changes might be needed, whether any bulk qualification and/or registration processes would be required and so forth. This will draw on experts from SESL, BSC participants, system providers and central service providers.

A9.14 As matters progress, it may be appropriate for additional expert groups to be convened.

Project organisation

December consultation document

A9.15 The December consultation document set out limited detail on the organisation of the project, and noted that the organisation would change over time in accordance with the demands of the project.

Respondents' views

A9.16 Two respondents commented on organisational issues. One said that to avoid wasting time Ofgem and the Scottish Executive should share a united platform on BETTA. The other said that it would be helpful to know who is responsible for what aspects of the project, and the level of involvement required.

Ofgem/DTI views

A9.17 Ofgem/DTI agree with both of these comments and have taken the following decisions:

- a Steering Group has been established. This Steering Group includes senior members of staff from Ofgem, DTI and the Scottish Executive and meets monthly to exercise overall stewardship over the project.

- a clear project structure has been established, and Appendix 5 gives further details of how work within the BETTA project will be organised.

Appendix 3 - Draft Regulatory Impact Assessment

R.1 This is the Draft Regulatory Impact Assessment (RIA) of the primary legislation that will facilitate the introduction of British Electricity Trading and Transmission Arrangements (BETTA).

R.2 The purpose of this RIA is to assess the impact of BETTA. The impact of BETTA has been appraised for its potential impact on competition in wholesale electricity and related markets, its impact on regulated elements of the electricity sector and its impact in other areas such as the environment. The purpose of the legislation is to enable reform rather than to specify the details of BETTA. The detail of the BETTA reforms will be manifested by and embodied within licenses and other core industry documents and it is intended that proposed drafts of such documents will be consulted on jointly by DTI and Ofgem. Details are not therefore finalised and may not be finalised at the time of the legislation. Consequently, estimates of costs and benefits set out here are generic in form and designed to be robust to a wide range of possible implementation details.

R.3 This assessment does not take into account potential fundamental reforms to transmission access and charging arrangements, as consulted on by Ofgem in February 2002 in respect of England & Wales. Possible modifications to England & Wales arrangements are presently being taken forward by the industry. The application of any such reforms on a GB basis under the umbrella of BETTA will be subject to further detailed consultation.

Purpose and intended effect of the measure

R.4 The purpose of BETTA is to facilitate the creation of a single, integrated and competitive wholesale electricity market covering the whole of GB. This will involve a GB transmission system operated by a single entity, with common rules and charging arrangements for connecting to and using the transmission system and with the balancing services procured by the system operator. The current differences between the interconnected systems in Scotland and England & Wales that limit competition between and within these geographical areas will be reduced and where possible removed. As well as improving competition, BETTA will facilitate the exploitation of economies of scale in the natural monopoly activity of transmission system operation, with a single operator replacing the current three operators.

R.5 Competition is a key element of the Government's energy policy. The principal objective of the regulator for gas and electricity markets, Ofgem[15], is to protect the interests of consumers, where ever appropriate by promoting effective competition. Competition promotes efficiency, and creates choice and value for customers. It ensures that existing resources are used efficiently, and that decisions on new investment are based on appropriate economic signals. It is anticipated that more competitive wholesale electricity markets will increase competition in electricity retail markets, and in other related markets such as gas supply.

R.6 The proposed legislation will enable the introduction of GB-wide arrangements for the trading and transmission of electricity by providing for:

- a licensed GB system operator, who is independent of electricity generation or supply interests;
- a GB Balancing & Settlement Code (GB-BSC) and Balancing Mechanism; and
- a GB Connection and Use of System Code (GB-CUSC) and associated charging methodologies and statements.

R.7 The revised licensing framework and associated documents will be enduring arrangements. As such they will affect the development of competition in both the short term and longer term.

Risk assessment

R.8 This regulatory measure is not designed to address directly risks to consumer or worker safety or health, or the environment as is the case with a great many Government regulations.

R.9 The key risk addressed by BETTA is the risk to consumers of higher prices and lower standards of services associated with a lack of effective competition. This risk is discussed in the main assessment of benefits that follows.

[15] Ofgem is governed by the Gas and Electricity Markets Authority and its powers are provided under the Gas Act 1986, the Electricity Act 1989 and the Utilities Act 2000. The Authority determines strategy and decides upon major policy issues. It is made up of executive and non-executive members and may regulate its own procedures and has adopted Rules of Procedure. Everything that Ofgem does is done in the name of the Authority.

Options

R.10 As noted in Paragraph R1.5, the promotion of effective competition is one of the key ways in which Ofgem can pursue its statutory duty to protect consumers. For a wide range of reasons, including asymmetric information between regulators and those regulated, the sharper incentives that competition places on economic actors, and the need for successful firms in competitive markets to understand the needs and wishes of their customers and, where possible, innovate to meet those needs, effective competition is more likely to protect consumers' interests than regulation.

R.11 Ofgem has also consulted widely on the effectiveness of competition on a GB basis, in the context of potential barriers to such competition for parties located or wishing to trade electricity in Scotland. A number of options have been considered through this process, including independent reform of Scottish arrangements allied with reform of the interconnector between the England & Wales and Scotland transmission systems.

R.12 Ofgem and the DTI have concluded through this consultation process that common GB arrangements underpinned by a single GB system operator independent from generation and supply interests is most consistent with an effective competitive market. A GB system operator independent of generation and supply interests operating within a transparent and robust regulatory regime of the kind envisaged by the BETTA proposals cannot be introduced without primary legislation.

R.13 There are many possible models for an integrated GB wholesale electricity market. However, the New Electricity Trading Arrangement (NETA) framework in operation in England & Wales since March 2001 provides a sensible starting point. NETA was implemented following extensive consultation, and shares common underlying objectives with BETTA. A GB system based on NETA principles will minimise disruption to market participants in England & Wales, and will very significantly reduce development and implementation costs.

R.14 A design of BETTA based around a GB system operator independent from generation and supply, and NETA-based market mechanisms and core documents is therefore the only option under consideration and so long as the benefits of this option exceed its costs, it will be preferable to doing nothing.

Benefits

Identifying the benefits

R.15 The benefits of BETTA can be expected to come in the following main areas:

- greater competition in the supply and generation of electricity;
- greater competition in the provision of balancing services for the system operator;
- improved locational signals for generating plant, location-flexible demands, and transmission capacity;
- economies of scale in transmission system operation; and
- avoidance of separate arrangements for interconnection between Scotland and England.

R.16 These benefits are expected to be felt particularly in Scotland, where the degree of change to existing trading arrangements will be more dramatic. The benefits for consumers in England & Wales are likely to be small in view of the fact that the trading arrangements will not change substantially, the market in that region is already more competitive and that it is a far larger market than that in Scotland. For these reasons, no attempt is generally made in what follows to quantify any short-term benefits to customers in England & Wales.

R.17 However, the creation of a single GB market will support more efficient signals for the longer term development of the electricity transmission systems and the associated patterns of generation and demand. These improved economic signals in the context of an effective competitive market will deliver benefits to consumers across GB.

Greater competition in supply and generation

R.18 BETTA will improve the competitiveness of the wholesale electricity market in Scotland in the following ways:

- it will ensure that all generation and supply is treated even-handedly by a system operator which is itself independent from generation and supply. At present, there is concern among actual and potential independent

participants that Scottish Power and Scottish and Southern (the "incumbents") might treat their own generation and supply more favourably than that of others;

- it will ensure even-handed balancing costs. At present, independent generation and supply are exposed to balancing charges that are regulated by reference to those in England & Wales whilst incumbents are not exposed to clear cut charges but have to absorb the actual costs of system balancing within their portfolios. These different approaches will be replaced by one in which all suppliers and generators will face the same, market-based, balancing charges;

- it will encourage more effective competition between suppliers by removing the current situation in which the incumbents have to release generation to independent suppliers at regulated prices. The current situation is designed to ensure that independent suppliers can participate in the Scottish market, but limits the extent to which they will actively seek their own competitive advantage through lower generation costs; and

- by basing GB trading and transmission arrangements on those currently in place in England & Wales – and by reducing the number of contracts market players need to enter into in order to compete on a GB basis - , BETTA will reduce the transactions and learning costs of doing business in Scotland, since a wide range of companies are already familiar with the England & Wales arrangements.

R.19 Costs associated with generation and supply generally make up at least 50% of the final price of electricity to consumers – considerably more in respect of larger consumers. Our preliminary judgement is that an increased ability for suppliers and generators to compete in Scotland allied with sharper incentives to drive down costs (which in turn will exert greater pressure on incumbent suppliers) might lead to final prices to Scottish consumers being around 1% lower than otherwise. This is equivalent to combined generation and supply costs being between 1%and 2% lower than otherwise. With the value of sales to Scottish consumers being currently in the order of £1.6 billion per annum, this would be worth £16 million per annum. At a 6% discount rate, this in turn would have a present value of some £250 million. It should be noted that

competition in generation and supply is not currently absent in Scotland, it is just that various factors have inhibited its development.

Greater competition in balancing services

R.20 BETTA should improve competition in the supply of balancing services to the system operator in Scotland. At present, there is no transparent market for balancing services in Scotland and each of the incumbents carries out its own balancing using its own generation and supply. BETTA would improve the situation by:

- ensuring that all parties offering balancing services were treated even-handedly and removing any suspicion that incumbents might favour internal provision;
- enabling effective competition for the provision of balancing services between parties based in Scotland and those based in England & Wales; and
- providing clear market-based signals of balancing costs to market participants in Scotland, encouraging those participants to manage better their requirements for balancing services.

R.21 By analogy with the costs of balancing in England & Wales, the costs of balancing within Scotland are provisionally estimated to be in the order of £50 million per annum. Cost reductions equivalent to some 5% of these costs might be anticipated from the introduction of competitive arrangements for the first time and from the increased potential for competition between balancing service providers in Scotland and England & Wales. This would be worth some £2.5 million per annum with a present value of some £42 million.

Improved locational signals

R.22 BETTA will lead to a co-ordinated, set of locational price signals operating throughout Great Britain. At present each of the three transmission owners provides price signals for its own area, including signals for links to adjacent areas. Further, the price signal in respect of the Scotland-England interconnector is overlaid by a separate set of access arrangements that do not provide equal access rights to all parties. A single, coordinated set of signals and access rules

should ensure improved efficiency in the location of generation plant and location-flexible demands as between the three regions and should also optimise the balance between investment in new or replacement transmission capacity and investment in generation or demand reducing capacity.

R.23 Improved locational signals might, other things being equal, be expected to result in a reduced need for investment in the transmission system. To illustrate possible magnitudes, savings equivalent to 5% of the annual investment in the Scottish transmission networks might be expected (although a part of these savings might come via lower investment in England & Wales) would be worth some £9.5 million per annum, or £150 million in present value terms.

Economies of scale in system operation

R.24 BETTA will mean that instead of there being three system operators in Great Britain, each one monitoring its own part of the system, taking balancing actions as necessary and carrying out settlement operations, there will only be one. It is estimated that the annual system operation costs of the two Scottish incumbents are some £4.6 million per annum (excluding costs associated with the Interconnector) plus a further £5 million per annum for settlement.

R.25 Significant cuts in these costs should be accessible to the GB system operator, perhaps of the order of 50%. This would be worth £5 million per annum or some £80 million in present value terms.

Avoidance of interconnector arrangements

R.26 Approximately £2 million per annum has been spent by the Scottish transmission companies on administration of the interconnector between Scotland and England. BETTA has the effect of converting the interconnectors into just one part of the integrated Great Britain network with no separate commercial arrangements being required for its use.

R.27 As a result a saving of close to £2 million per annum should be possible, with a present value of about £33 million.

Summing the benefits

R.28 From the above paragraphs we get a total annual benefit of £35 million having a present value of some £570 million, assuming the benefits are indefinite and discounted at 6% per annum in real terms.

R.29 In due course, competition would ensure that these benefits accrue to electricity consumers in the form of lower prices. Most of the short term benefits are likely to be felt by consumers in Scotland where they could amount to prices being some 1-2% lower than they would otherwise have been. However, the longer term development of a more competitive market across GB will benefit consumers in England & Wales as well.

Costs

Assessing the costs

R.30 The implementation of BETTA will require the development of central systems to support the GB Balancing Mechanism and settlement, and the associated operational actions of the GB system operator. Any recovery mechanism for such costs, where efficiently incurred, will be subject to consultation.

R.31 BETTA will require a transfer of functions from existing transmission licensees to the GB system operator. There is a cost associated with this transfer of functions. The creation of a GB system operator will involve costs to create and operate an interface between the GB system operator and transmission asset owners. The detail of such costs will depend on the precise allocation of functions to the GB system operator. This issue is the subject of further consultation.

R.32 There will be costs for market participants in preparing to operate within the GB market underpinned by BETTA. There will also be costs associated with participation in the consultative process operated by Ofgem and DTI to develop the detailed design of BETTA, in terms of licence conditions and core documents.

R.33 BETTA will also require significant resource commitments from Ofgem.

Quantifying the costs

R.34 At this stage it has not been possible to carry out an assessment of the implementation costs of BETTA to enable estimates of such costs to be included in this draft assessment. However, in broad terms it is anticipated that these costs will be modest since the main issue is the extension of what is now a tried and tested system in England & Wales to cover Scotland as well. Issues of system design can therefore be kept to a minimum and the new systems will already be familiar to almost all the parties affected.

GB Balancing and Settlement

R.35 A GB Balancing Mechanism requires that parties can submit bids and offers, and that the system operator can accept, issue operational instructions and subsequently settle such bids and offers. Since the GB system operator will have access to current central NETA systems (modified as necessary) the costs relate mainly to the extension of system underpinning the balancing mechanism and settlement systems in England & Wales.

R.36 The largest cost item is expected to relate to GB system operator systems to implement accepted bids and offers in the balancing mechanism and to model the need for balancing services and system control on a GB basis. Extension of such systems may require capital investment in additional IT equipment. It will also require significant data transfer and validation in respect of networks, generation and demand situated in Scotland. Central systems will also need to be extended to enable parties to be registered, for energy volumes and contract positions to be notified and aggregated, and for imbalances to be cashed out. These changes are expected to be limited in scale, given the tried and tested nature of the NETA systems upon which they will be based.

R.37 It will also be necessary for market participants to submit the necessary contract and metering data to central systems. The costs directly borne by market participants are however expected to be low given the fact that the main participants in the Scottish electricity market also already participate in the England & Wales market and thus understand the NETA systems and are able to use them.

Wider GB system operator and transmission asset owner activities

R.38 At present the system operator and transmission owner in England & Wales are the same company, NGC. Likewise both Scottish Power and Scottish and Southern also perform both system operator and transmission owner roles in their respective regions.

R.39 Whilst the regulator can and does use different regulatory tools and measures on the system operator and transmission owner parts of the businesses, there may be advantages from a regulatory point of view in having both these monopoly functions within the same organisation.

R.40 Under BETTA, although final decisions have still to be made, it is quite likely that there will continue to be three separate transmission owners. Some additional regulatory work will be needed to define and enforce appropriate regulation of the commercial relationships between the single system operator and the separate transmission owners. The need for additional regulation in this area could lead to some additional costs and losses of efficiency. However, these costs and efficiency losses are expected to be small, given that the regulator already needs to exercise oversight over both the system operator and transmission owner functions of the existing companies.

Ofgem costs

R.41 Ofgem has allocated costs of £8m to BETTA over the next three years in its corporate plan, which was published for in April 2002[16].

Consultation with small business

R.42 The vast majority of small businesses in Great Britain will only be affected by BETTA to the extent that it leads to changes in their electricity prices

R.43 Small businesses in the electricity sector will be affected by BETTA. In broad terms it is anticipated that opening up the electricity market in Scotland to more effective competition will improve the prospects for smaller companies operating in that market which remains overwhelmingly dominated at present by the incumbents. The more competitive market in England & Wales has seen considerable new entry in both generation and supply, although it is also

[16] Ofgem corporate strategy and plan 2002 – 2005. Ofgem, April 2002.

recognised that there has also been a degree of consolidation suggesting that electricity generation and supply may be activities that exhibit economies of scale that make them less suitable activities for small businesses.

R.44 A group of small businesses of particular interest is that of small generators producing electricity from renewable or combined heat and power installations. The impact of BETTA on this group is considered further below.

R.45 Ofgem issued a consultation document on BETTA in December 2001 prior to this consultation document. Further consultation is anticipated as details of the BETTA arrangements become clearer. In all these consultations, the views of all electricity consumers, business and private individuals, are sought and copies of consultation documents are sent to organisations representing consumer interests such as energywatch. Specific comments in respect of the impact of BETTA on small business, and in particular small and renewable generators, is invited in the context of this draft RIA.

Environmental impacts

General

R.46 BETTA is not a measure whose primary purpose is to promote benefits to the environment. However, by promoting effective competition and hence the more efficient use of all resources, and also the better use of resources in monopoly activities, BETTA should have a generally, if mildly, positive environmental impact.

R.47 For example, the enhanced competitive pressures under BETTA should sharpen incentives on generators to minimise the use of fuel in their activities whilst the improved locational signals should reduce the need for investment in costly and unsightly transmission facilities.

R.48 However, to the extent that greater competition also leads to lower prices for consumers, there could be adverse environmental effects as consumers chose to use more electricity. However, it has previously been estimated that the impact on customers' bills might be about 1-2% in Scotland, and significantly less in England & Wales. Price differences of that magnitude are unlikely to lead to material increases in electricity use.

R.49 Perhaps the main way in which BETTA will have an environmental impact is in its impact on the relative commercial attractions of electricity generation of different sorts. BETTA is not intended to benefit any particular type of generation relative to any other type – it is intended to be neutral in this respect. Nonetheless, the changes from the existing arrangements may produce some changes in the relative attractions of different generation types. In the section that follows we look in particular on the likely impact of BETTA on environmentally attractive forms of generation such as renewables and combined heat and power.

Impact on renewables and combined heat and power (CHP)

R.50 The primary purpose of electricity transmission and trading arrangements is to establish a framework for a competitive electricity wholesale market which meets the needs of consumers. However, it is also very important that electricity trading and transmission arrangements are not biased against environmentally friendly generation or place unnecessary barriers in its way. In addition there is already a range of Government measures in place to encourage environmentally beneficial forms of generation. Renewable Obligations have just been introduced in both England & Wales and Scotland and renewables are exempt from the Climate Change Levy (CCL). Government is also working on a strategy to support CHP and Treasury recently announced full exemption for CHP from the CCL. Finally, in addition to its principal objective to protect the interests of consumers by promoting effective competition, Ofgem has other statutory duties which include having regard to the effect on the environment in carrying out certain of its functions and it will also have regard to guidance on social and environmental matters issued by the Secretary of State.

R.51 It has been claimed that NETA is biased against small renewable and CHP generation in a number of ways such as the following:

- it is excessively harsh in its treatment of unpredictable generation. Many renewables (especially wind) and some CHP come into this category;
- NETA is complex to understand and, by requiring 24 hour and 7 day a week monitoring, is costly for small companies; and

- NETA has led to reduction in the value of "embedded benefits" which are accessible by smaller generators not directly connected to the transmission networks.

R.52 Ofgem and DTI have taken these concerns very seriously. Ofgem carried out an assessment of the impact of NETA on these generators in August 2001[17] and in November 2001[18] the DTI published a consultation document to seek views on how to help smaller generators operate more effectively under NETA.

R.53 On 4th April 2002[19], DTI published its response to that consultation. The DTI response noted that progress had been made in a number of areas since the consultation and proposed further steps to assist smaller generators in the following areas:

- reducing the period of gate closure in NETA;
- considering the case for and possibility of unbundling embedded benefits;
- assessing the need for comprehensive guidance for small generators and provide funding if necessary; and
- assessing the need for standard contracts for smaller generators;

R.54 Finally, it is proposed that Ofgem carry out a full review of the impact of NETA on smaller generators once data for a full year is available. That review would consider whether NETA was producing cost reflective prices and if not how NETA might be modified to improve the situation.

R.55 Both DTI and Ofgem are working hard to ensure that the trading and transmission arrangements in England & Wales are not biased against renewables and CHP and any changes that are introduced to the England & Wales arrangements in pursuit of that objective will of course be incorporated into the BETTA arrangements covering Scotland.

[17] Report to the DTI on the Review of the Initial Impact of NETA on Smaller Generators. Ofgem, August 2001.
[18] Government Response to Ofgem's Reports "The New Electricity Trading Arrangements – Review of the first three months", and "Report to the DTI on the Review of the Initial Impact of NETA on Smaller Generators". 1 November 2001.
[19] Government Response to the Consultation on NETA and Smaller Generators of 1 November 2001. 4 April 2002.

R.56 There are also a number of other ways in which BETTA would affect renewables and CHP. BETTA should help small generators in the following ways:

- companies operating in both England & Wales and in Scotland will only have one set of trading and transmission arrangements to master instead of two. This will reduce a barrier to entry;
- use of Consolidators is one way that small generators can manage imbalance risks under NETA. BETTA should make it easier for consolidation to combine generation in Scotland with generation in England & Wales and thereby increase its potential benefits;
- companies wishing to trade between Scotland and England will no longer have to be concerned about interconnector access since this will become incorporated in their transmission or distribution use of system charges. This will remove a barrier to entry;
- by increasing effective competition in electricity supply, BETTA should make it more likely that smaller generators in Scotland will face a wider range of potential purchasers of their output than at present and thus be able to negotiate better prices; and
- an integrated set of transmission price signals and incentives should improve the prospects of new transmission capacity being provided where there is an economic case for so doing. This could benefit renewable generation in Scotland where there is currently some concern that there will be inadequate transmission capacity to bring potential renewables developments to market.

R.57 On the other hand, small and intermittent generators could be adversely affected in some respects by BETTA. For example, independent generators in Scotland currently face regulated imbalance charges that, although related to actual imbalance prices in England & Wales, are limited by both caps and ceilings. Exposure to unregulated imbalance charges could be more onerous for some participants, especially those with unpredictable output.

R.58 Our preliminary assessment is that on balance BETTA will have a small positive impact on renewable and CHP generation in Scotland. However, it is recognised that there are uncertainties in this area and responses are particularly invited on

how BETTA will affect such participants and on ways in which adverse effects might be mitigated within the broad outlines of the expected arrangements.

Competition filter

R.59 In this section, we consider a set of general questions which the Office of Fair Trading (OFT) use to assess whether a proposal would have a significant impact on competition. It has already been pointed out above that the major aim of BETTA is to improve competition in electricity markets, especially in Scotland.

Would the costs of BETTA affect some firms substantially more than others?

R.60 To the extent that market participants face direct costs, these are expected to fall mainly on participants in Scotland since it is the Scottish market that is being targeted for greater competition. It is yet to be decided how the costs incurred by the new GB system operator will be recovered.

R.61 BETTA will result in a transfer of functions to the GB system operator from existing transmission companies. Clearly, this will only affect transmission companies, and could also be expected to transfer the value of regulatory incentives associated with these activities under the existing regime. Electricity transmission is accepted to be a natural monopoly activity requiring ongoing regulation.

Is BETTA likely to affect market structure, changing the number/size of firms?

R.62 BETTA will make it easier for new entry to a range of electricity market activities in Scotland where markets are currently dominated by two large companies each with very considerable market share in its own area and with a wide range of interlocking activities that it might be able to use to cross subsidise activities, limit transparency and discourage entry.

R.63 While it is difficult to anticipate how parties will avail themselves of these new commercial opportunities, the market structures that evolve as a result of BETTA are expected to be more dynamic.

Would BETTA lead to higher set up costs for new or potential firms compared with the costs of existing firms?

R.64 BETTA will reduce set up costs for new or potential firms since the various sets of market rules that exist currently for Scotland and England & Wales, and in respect of the interconnector between the two systems, will be rationalised under one set of trading rules. Further, these rules will be subject to open and transparent processes for consultation and modification, with regulatory oversight. The need to become familiar with fewer and more transparent rules, will be of particular benefit to firms wishing to operate in both Scotland and England & Wales, although to the extent that each system is not entirely independent of the other at present, there will also be benefits for participants wishing to operate in just one region.

Would BETTA lead to higher ongoing costs for new or potential firms compared with the costs for existing firms?

R.65 BETTA will ensure that new entrants face the same costs as existing firms of a similar nature. This is not the case at present in Scotland where incumbents face different rules from those applied to independent generators and suppliers. Partly as a result of these arrangements there has been very little entry into the Scottish markets over the past decade.

Are the electricity wholesale markets characterised by rapid technological change?

R.66 Rapid change has not been evident in recent years. Generating technologies employed have not changed a great deal. The main area of change has been in market liberalisation which has permitted electricity consumers to choose between suppliers.

R.67 Looking forward, however, a higher degree of technological change might be expected, first in the way that electricity generation responds to environmental pressures that are expected to become tighter and secondly as the relationships between customers, suppliers and generators adapt to the new technologies and market arrangements.

Would the regulation restrict the ability of firms to choose the price, quality, range or location of their products?

R.68 No. The greater competition arising from BETTA should lead to a greater range of products being offered.

Enforcement, sanctions, monitoring and review

R.69 BETTA will be implemented in practical terms through licences and changes to core industry documents. Licence obligations are enforced by Ofgem, and licence breaches can be subject to financial penalties. Licensed parties will be obliged to sign and comply with core industry documents. In addition, signatories to these documents will be bound by the contractual terms therein.

R.70 Licences can be subject to modification proposals by Ofgem, and disputes in respect of proposed modifications can be referred to the Competition Commission. Modifications to core industry document will have an open and transparent governance process, with regulatory oversight. Participants under BETTA will also continue to be subject to the normal operation of competition law.

Summary and recommendations

R.71 [This section will be completed in the final Regulatory Impact assessment, taking into account the comments received on the current draft.]

Appendix 4 - The way forward

Introduction

The December 2001 paper set out Ofgem's high level timetable for the implementation of the BETTA project, with completion targeted for April 2004. This appendix sets out further detail on the project plan and resources to meet this timetable, as well as the principal organisational steps that need to be taken.

In developing the detailed project programme for BETTA, Ofgem will be giving consideration to whether individual items within the programme can be implemented in advance of the planned completion date for BETTA in order to provide early gains and to facilitate the transition to BETTA for industry parties.

Project approach and target implementation date

Section 5 of the main document summarises the key elements of the plan that were described in the December consultation document. Whilst noting that further detailed work is required, a summary timetable is being prepared in the light of responses to the December consultation document and further thinking on the part of Ofgem/DTI. Comments on this plan will be invited at the June seminar that Ofgem/DTI intend to hold to discuss a number of issues relating to the BETTA project, and written views are invited in response to this document.

There are a number of key assumptions that underpin the timetable. Apart from the availability of Parliamentary time leading to legislation being in place by the summer of 2003, they include:

- that the GB system operator and the GB BSCCo can be identified early enough for them to begin relevant work;
- that the timescales shown in the plan for system development and implementation work are valid; and
- that issues of concern to principal participants are identified and resolved in a timely manner.

Project organisation

The project team within Ofgem has now been established. The timetable contains five principal workstreams. They are:

- legal documents;
- transition and implementation;
- allocation of transmission functions;
- price controls and incentives; and
- transmission charging.

The first two workstreams are focused on delivery, and the remainder develop requirements to be delivered.

In future, as the project develops, it is envisaged that the organisational structure will change. In particular, over time resources will move progressively into the two delivery workstreams, Legal Documents and Transition and Implementation.

The project is taking the approach that necessary systems development work will be undertaken by the bodies who will be using the systems. These include in particular the system operator and the central service providers. The project is planning to take merely a coordination and enabling role in this area.

June seminar

Ofgem/DTI propose to hold a seminar in June to enable an open discussion on how best to take forward a number of the issues set out in this paper. The intention will be to engage participants in discussion on the key elements of BETTA, to inform Ofgem/DTI in advance of further consultation on such topics. More detail on the date, venue and agenda will be published on the Ofgem website in the near future.