

EXPLANATORY MEMORANDUM TO THE

ENERGY ACT 2004 (ASSISTANCE FOR AREAS WITH HIGH DISTRIBUTION COSTS) ORDER 2005

2005 No. 528

1. This explanatory memorandum has been prepared by the Department for Trade and Industry and is laid before Parliament by Command of Her Majesty.

2. **Description**

2.1 This Order amends the licences issued to different types of electricity undertakings in order to establish a scheme to protect electricity consumers in an area of Northern Scotland which has high electricity distribution costs. The scheme will apply to the part of Northern Scotland which is described in Schedule 1, and the effect will be to offset the relatively high electricity distribution costs that apply there. This scheme will replace a scheme known as 'Hydro benefit', which was enforced by conditions in licences issued to particular Scottish electricity undertakings, and which formally ended in January 2004 (although it will be maintained on a voluntary basis until 31 March 2005).

3. **Matters of special interest to the Joint Committee on Statutory Instruments.**

3.1 None

4. **Legislative Background**

4.1 The order is made under Section 184 of the Energy Act 2004. It provides for an annual payment to be made to the operator of the electricity distribution network in a specified area, if the cost per customer is significantly higher than elsewhere, with the cost to be recovered from electricity suppliers across Great Britain. The distribution network operator in receipt of the payment must pass this benefit on to suppliers in the area.

4.2 Section 184 provides for various details of operation of the scheme, and permits the Secretary of State to make an Order defining the area to which the scheme applies, as well as the level of the annual payment to be made to the distribution network operator in that area. Details of the area to which the scheme applies – which is intended to correspond to the area to which the former Hydro Benefit scheme applied - are included in Schedule 1 of the Order.

4.3 Section 184 also permits the Secretary of State to make amendments to the licence conditions of electricity suppliers, transmitters and distributors for the purpose of facilitating the implementation of the scheme. These amendments are contained in Schedules 2-9 of the Order.

4.4 The Secretary of State is required to consult before making an Order under section 184. The DTI carried out two consultations on the scheme, commencing on 20 October and 23 December 2004. The new licence conditions which appear in the Schedules to the Order are the product of extensive consultation with interested parties including the Gas and Electricity Markets Authority (Ofgem). It is intended that the government response to the consultations will be published at the same time as the Order is laid before Parliament.

5. Extent

5.1 This instrument applies to Great Britain.

6. European Convention on Human Rights

Not applicable

7. Policy background

7.1 This instrument is concerned with a replacement to the 'Hydro Benefit' scheme, which was designed for social policy reasons to protect consumers from the high cost of electricity distribution in northern Scotland.

7.2 Hydro Benefit took the form of an annual payment from the hydro-electric generation business of Scottish Hydro Electric (SHE) to its distribution business, which covers sparsely populated areas in the North of Scotland, so as to defray the high costs of distributing electricity there. The level of payment was £38.6m in 2002/03. Following legal advice, Ofgem announced in 2004 that this scheme would end as it did not fully comply with EU law, and the Government announced that it intended to replace Hydro Benefit with a successor scheme.

7.3 The new scheme is established under Section 184 of the Energy Act 2004, which gives the Secretary of State the power to make an order requiring authorised transmitters to make a payment to the relevant distributor serving a single specified area, where distribution costs are significantly higher than in any other area of Britain. The payment must be passed from the distributor to authorised electricity suppliers within the area. The scheme is to be funded by charges on suppliers across Britain.

7.4 As required by the Act, this scheme will be reviewed every three years.

8. Impact

8.1 A Regulatory Impact Assessment is attached to this memorandum

9. Contact

David Curran at the Department of Trade and Industry, Tel: 020 7215 2779 or e-mail: david.curran@dti.gsi.gov.uk, can answer any queries regarding the instrument.

ENERGY ACT 2004 (ASSISTANCE FOR AREAS WITH HIGH DISTRIBUTION COSTS) ORDER 2005: REGULATORY IMPACT ASSESSMENT

1. PURPOSE AND INTENDED EFFECT OF MEASURE

Objective

1.1 Section 184 of the Energy Act 2004 enables the Secretary of State for Trade and Industry to put in place a scheme that cross-subsidises the costs of distributing electricity in a particular area of Great Britain if these are significantly greater than distribution costs elsewhere. This is to replace the so-called “Hydro Benefit” scheme, which was designed for social reasons to subsidise comparatively high electricity distribution costs in northern Scotland.

Background

1.2 Hydro Benefit has existed in various forms since 1943 when the North of Scotland Hydro-Electric Board (NoSHEB) was created in order to electrify northern Scotland. More generally, the NoSHEB was established to help promote economic development in the Highlands & Islands, which had experienced relatively high unemployment and depopulation in the preceding decades. The NoSHEB was succeeded by Scottish Hydro-Electric (SHE) on 1 April 1990, which was floated on the stock exchange on 18 June 1991.

1.3 Given the abundance of hydro electricity in northern Scotland, Hydro Benefit was devised for social reasons as a means of ensuring that some of the financial benefits enjoyed by SHE through its ownership of relatively cheap hydro generating assets could be used to offset some of the expense that its customers would otherwise bear through the higher costs of transporting electricity to and within the Highlands & Islands.

1.4 As illustrated in Appendix A, average distribution costs in North Scotland were easily the highest of any region in Great Britain – over 50% higher than the national average – in 2002/03, even after the reduction afforded by Hydro Benefit. The average cost in North Scotland without the subsidy would have been around 100% higher than the overall GB average, principally because of the large, sparsely populated terrain that must be wired to transport electricity to local consumers.¹ Indeed, SHE served only 2.4% of all electricity customers by number (both domestic and non-domestic), yet had by far the highest system length per customer of any distribution area in Britain – see Appendix B.

1.5 Hydro Benefit was an annual payment from the hydro-electric generation business of SHE to its distribution business so as to defray the high costs of distributing electricity in northern Scotland. Since industry privatisation in 1990 the maximum payment that could be made in any year was capped at the estimated economic rent² of local hydro generating assets: £40 million at 1990/91 prices, uprated in line with inflation each year, of which £29 million was dedicated to subsidising distribution costs and the remaining £11 million to transmission costs.³ The annual payment actually made was initially set at a level intended to equalise the distribution costs in North Scotland with those in South Scotland. However, this cost equalisation approach was abandoned in

¹ Although a range of factors other than population density will affect relative distribution costs, another factor is the extent to which wires must be placed underground.

² Economic rent is the return that remains after all costs to the relevant factors of production (i.e., land, labour, capital and enterprise) have been met. Economic rent may thus be seen as a surplus sum that is not required to motivate production.

³ The power to make annual payments of £11 million at 1990/91 prices to Scottish Hydro-Electric Transmission, which owns and maintains the high voltage transmission network in northern Scotland, was never exercised because the former Director-General for Electricity Supply concluded that local transmission costs were not substantially greater than those elsewhere.

the 2000-2005 distribution price control review due to (i) a predicted rise in the unsubsidised relative cost of distributing electricity in North Scotland which would have required the offsetting annual payment to exceed its cap; and (ii) concerns that equalisation created perverse incentives for SHE not to maintain its hydro generators or distribution network properly. As a result, between April 2000 and January 2004 the annual level of Hydro Benefit paid to SHE's distribution business was based on a formula which specified that the annual cross-subsidy would vary in relation to that year's profits attributable to the operation of local hydro generation.⁴

1.6 Hydro Benefit was applied through a reduction in SHE Power Distribution's annual price control revenue, which is the maximum sum of money that the company is permitted to recover from its customers for use of the electricity distribution network in northern Scotland. This had the effect of lowering the Distribution Use of System (DUoS) charges that SHE could levy. The precise manner in which the company recovers this revenue is a matter for the company subject to certain guidelines including non-discrimination and the requirement that the differences in DUoS tariffs reflect differences in the costs associated with such provision.

1.7 Post-privatisation, the legal basis of Hydro Benefit was the existence of specific conditions in the generation and distribution licences that SSE must hold, which was required by Section 6 of the Electricity Act 1989, as amended, and which obliged SSE Generation to make annual payments to SHE Power Distribution. This was a unique feature of the restructuring of the British electricity industry during 1990 as a precursor to privatisation in that this licence condition only applied to SHE.⁵ No other cross-subsidies were put in place at the time of industry privatisation in order to reduce the cost of transporting electricity to end-users in particular regions of Britain. Moreover, as the result of a reference by the then Director General of Electricity Supply, the Monopoly and Mergers Commission concluded in 1995 that the principle of Hydro Benefit was "in the public interest because it protects consumers, and especially those in rural areas, in respect of the prices charged for electricity."⁶

1.8 Following legal advice, however, Ofgem concluded during 2003 that these licence conditions should be removed in order fully to comply with European Union (EU) law. Section 3 of the Electricity Act 1989, as amended, requires the regulator to comply with EU law, irrespective of its duties and its principal obligation to protect the interests of consumers. Consequently, Ofgem published a consultation document⁷ on 28 November 2003 inviting views on its proposal to abolish the licence conditions. Following the end of the public consultation, Ofgem published a decision letter⁸ on 9 January 2004 in which it announced that the licence conditions that had hitherto underpinned Hydro Benefit would end on 12 January 2004. The previous arrangements would have remained in force until 2007; continuation of the scheme would then have been subject to review.

1.9 In response to Ofgem's consultation, the Government announced on 11 December 2003 that it intended to replace Hydro Benefit with a successor scheme.⁹ The then Energy Bill was amended in the 2003/04 session of Parliament – now Section 184 of the Energy Act 2004 – to empower the DTI Secretary of State to require the Great Britain System Operator (GBSO)¹⁰ following the introduction of the British Electricity Trading and Transmission Arrangements (BETTA) to make payments to the relevant distributors serving the area with the highest distribution costs. The

⁴ See sections 6.47-6.56 of Ofgem's 1999 "Distribution Price Control Review – Final Proposals"

(http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/1180_pesd.pdf) document for more information.

⁵ Scottish and Southern Energy was formed upon the merger of Scottish Hydro-Electric and Southern Electric in December 1998.

⁶ Section 2.104, http://www.competition-commission.org.uk/rep_pub/reports/1995/367scottish.htm. Non-domestic electricity consumers would also have benefited.

⁷ http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/5198_HydroBenefit_sl1notices.pdf

⁸ http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/5545_openlet_decision_hydrobenefit_9jan04.pdf

⁹ <http://213.38.88.221/gnn/national.nsf/TI/ED3BFA8D48E300E580256DF90050F538?opendocument>

¹⁰ The National Grid Company will be the GB SO; National Grid is already the SO in England & Wales.

payments by the GB SO would then be recovered from all electricity suppliers in Britain by increasing their transmission charges accordingly.¹¹

1.10 Following the Energy Act's Royal Assent in July 2004, the DTI launched two related consultations on the detail of the successor scheme.

Risk Assessment

1.11 In the absence of a successor scheme, the end of Hydro Benefit would result in a significant increase in the price of electricity to all consumers in northern Scotland, as SHE Power Distribution would in all likelihood seek to increase the DUoS charges paid by local electricity suppliers, which would then be passed on to end-users to varying degrees. This scenario will not take place before 1 April 2005 given that SHE has undertaken not to alter its DUoS charges as a consequence before the scheduled start of BETTA; this undertaking is formalised in the company's allowed revenue restriction for 2004/05. Without a replacement scheme, one cannot discount the possibility of a sudden increase in domestic electricity prices in northern Scotland during 2005/06 which would occur if suppliers choose to make immediate adjustments to their retail prices. In practice, the advent of BETTA and the next Distribution Price Control period in 2005 would introduce additional upward and downward pressures on the local retail price of electricity, so the overall impact is ambiguous at this stage.

1.12 In 2002/03 around £38.6 million was transferred from SSE Generation to SHE Power Distribution – see Appendix C. On this basis, electricity suppliers' total costs in northern Scotland would have been up to £38.6 million higher if Hydro Benefit had not existed because SHE's allowed revenue would have been £38.6 million higher. Whilst it cannot be determined with certainty what the impact on average distribution costs and end-user prices would have been if Hydro Benefit had not existed at the time, it is assumed that the additional cost would have been recovered in proportion to domestic and non-domestic electricity demand. According to Ofgem, there were approximately 676,000 customers in the SHE distribution area in 2002/03, of which 96% were domestic and the remaining 4% were non-domestic by number. In contrast, domestic customers accounted for about 45% of total electricity consumption in northern Scotland and non-domestic customers the rest. Assuming that some £17.4 million (i.e., 45% of £38.6 million) was recovered from domestic end-users, it follows that each one would have paid in the region of £27 per annum more without Hydro Benefit on average.

1.13 Taking into account local electricity consumption patterns, this sum would have represented an increase of around 7% on the typical annual bill of a standard credit domestic electricity consumer in northern Scotland – see Appendix D. Non-domestic customers would have paid an additional £770 on average, though the exact impact would have varied in relation to the annual level of electricity consumption.

2. OPTIONS

2.1 As mentioned above, the licence condition giving effect to the Hydro Benefit arrangements was removed on 12 January 2004 and Parliament has provided for a successor scheme in Section 184 of the Energy Act 2004. The two main options for consideration are therefore now:

- I. to allow Hydro Benefit to lapse permanently – i.e., do nothing; or

¹¹ One should note that the proposed legislation would restrict the benefits of a successor scheme to distribution companies that serve at least 100,000 premises in an area. These companies would then be required to pass on the benefit to authorised electricity suppliers in that area.

- II. to replace Hydro Benefit by laying the proposed Order-in-Council which would transfer the source of the cross-subsidy from SSE Generation to all electricity suppliers in Great Britain. The DTI is confident that such a successor scheme complies with EU law.

3. COSTS AND BENEFITS

Business sectors affected

3.1 The proposed legislation will directly impact on all electricity suppliers in Britain, but especially on Scottish and Southern Energy (SSE). The six largest companies in the electricity supply industry are: RWE Innogy, Powergen (soon to be renamed E.ON UK), EDF Energy, Centrica, Scottish Power and SSE. Viridian's Northern Ireland Electricity is not affected.

Assumptions

3.2 As a purely counterfactual example, the following analysis is largely based on 2002/03 because this is the most recent financial year for which data are available. Moreover, it is assumed that the level of the cross-subsidy that underpinned Hydro Benefit in 2002/03 remains constant in real terms in future years. In order to isolate the effect of Hydro Benefit on distribution costs and thus electricity retail prices, the benefits that Scottish consumers are likely to receive under BETTA in 2005/06 and later years are not considered. Even though the introduction of BETTA and GB-wide electricity transmission charging in April 2005 would tend to lower retail prices in Scotland, these are independent of any discussion regarding the principle of replacing Hydro Benefit. The possible impact of the current Distribution Price Control Review for 2005-10, which tends to increase distribution costs and thus retail prices in North Scotland relative to the rest of GB, is ignored for the same reason.¹²

Option I

3.3 The main benefit of this option is the eventual elimination of what is technically a market distortion – i.e., the cross-subsidy between SSE's generation and distribution businesses that artificially depresses end-user prices in northern Scotland. Consequently, electricity is being over-consumed locally relative to its economically efficient level because the economic cost¹³ of an additional kilowatt hour (kWh) of electricity in SHE's area exceeds what local consumers actually pay for that kWh in a competitive market. In terms of strict economic efficiency, the cross-subsidy contributes to a sub-optimal allocation of resources.

3.4 Under this Option the retail price of electricity in northern Scotland would rise and consumption would decline to levels where they more closely reflect the combined cost of producing, transporting and supplying the volume of electricity that is consumed in SHE's area. Assuming that each pound of consumer and producer welfare is of equal weight, the price rise would lead to an increase in total economic welfare¹⁴ as electricity suppliers would collectively gain by more than consumers would lose.¹⁵ It is difficult to estimate how large this overall gain in total welfare might be, but economic theory suggests that it would only represent a small proportion of

¹² http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/9416_26504.pdf

¹³ Economic cost differs from accounting cost in that the former also includes the opportunity cost (i.e., the value of what would be done with the asset if it were not used for production).

¹⁴ Total economic welfare is the sum of the benefits that producers and consumers of a good jointly derive.

¹⁵ Equally, if electricity were being under-consumed relative to its economically efficient level, then a price fall and consumption increase would also lead to a gain in total welfare as consumers benefit by more than producers lose. Economic theory proposes that total economic welfare is maximised when the market-clearing price of a good equals its marginal cost of production ($P=MC$).

the total size of the subsidy given the low price elasticity of demand for electricity.¹⁶ It seems plausible that the increase might lie in the range of 5-10% of the annual cross-subsidy. The gain in absolute terms would therefore have been in the range of £1.9-3.9 million per year.

3.5 Social factors aside, the direct costs of implementing this option are zero, as it refers to the end of an existing practice and policy. Option I does not require any particular actions on the part of the Government or other body in the public/private sector.

3.6 A notable consequence of ending Hydro Benefit would probably be an increase in “fuel poverty”¹⁷ in northern Scotland, as local end-user electricity prices would most likely rise considerably and possibly abruptly. The 2002 Scottish House Condition Survey¹⁸ found that 286,000 – or 13% of – households in Scotland met the Scottish Executive’s definition of fuel poverty. Analysis set out in Appendix E suggests that the overall incidence of fuel poverty in the sixteen unitary local authorities that lie wholly or partly within SHE’s area was approximately 4 percentage points higher than the Scottish average. Despite having about a third of all electricity customers in Scotland, the analysis also suggests that as much as 44% of the total number of fuel poor households was located in SHE’s area. The greater concentration of fuel poverty in northern Scotland suggests that a significant electricity price rise in that area would produce an appreciable rise in the number of fuel poor households in that area.

3.7 According to the 2002 Scottish House Condition Survey, a 7% rise in the retail price of electricity would increase the total number of fuel poor households in Scotland by some 43,000, other things being equal.¹⁹ As this price rise would only take place in northern Scotland, this implies that the actual increase would have been up to 19,000 households (i.e., 44% of 43,000) or an overall increase of 15% on the estimated total number of fuel poor households in the area. Hence, Option I would tend to impede the Scottish Executive’s policy of ensuring that, so far as reasonably practical, fuel poverty in Scotland is eliminated by late 2016. It follows that there may be a negative, if limited, impact on the ability to meet the UK Government’s target to abolish fuel poverty nationally by 2016.

3.8 Although improving the energy efficiency of the least efficient dwellings would produce a substantial and sustained reduction in the incidence and degree of fuel poverty in Scotland, thereby offsetting the negative effects of an electricity price rise, such an improvement could not realistically be achieved quickly. It is thus likely that there would be a prolonged period between the introduction of Option I and the benefits of a more energy efficient housing stock.

3.9 Ignoring the distributional impact, one can speculate that Option I might result in a positive net benefit of less than £4 million per year at 2002/03 prices, which is very small in comparison to the £9.2 billion size of the overall British electricity market in 2001.²⁰ This is because, despite strictly being a market distortion, Hydro Benefit only affects just over 2% of all electricity customers in Britain by number. However, fuel poor households generally have lower incomes than non-fuel poor households,²¹ so the adverse impact of an electricity price rise on the welfare of the

¹⁶ If the price elasticity of demand were zero, then there would be no impact on consumption and hence no overall welfare gain.

¹⁷ Fuel poverty is said to exist when a household must spend at least 10% of its income to maintain a particular heating standard. The second annual progress report of “The UK Fuel Poverty Strategy” (2004) is available at http://www.defra.gov.uk/environment/energy/fuelpov/pdf/fuelpov_2nocover.pdf.

¹⁸ Table 11.21, “2002 Scottish House Condition Survey – National Report”, Communities Scotland (<http://www.shcs.gov.uk/pdfs/NRRChap11.pdf>).

¹⁹ Table 4.1 and figure 4.2, “2002 Scottish House Condition Survey – Fuel Poverty in Scotland”, Communities Scotland (<http://www.shcs.gov.uk/pdfs/FPRReport.pdf>).

²⁰ Gross Value Added at basic prices of SIC 40.1, “Production and distribution of electricity”. Source: Annual Business Inquiry, National Statistics (http://www.statistics.gov.uk/abi/section_e.asp).

²¹ According to table 11.25 of the 2002 Scottish House Condition Survey, 86% of fuel poor households had weekly incomes of less than £200.

former will tend to be greater than on the latter. This distributional impact can be taken into account by assigning a greater weight to the economic welfare of poor households.²² The estimated net benefit of ending Hydro Benefit therefore becomes negative if the welfare of fuel poor households is considered to be significantly more important than everyone else's.

Option II

3.10 The principal benefit of Option II – in one sense a continuation of the status quo – would be to avoid a (possibly sudden) rise in the number of fuel poor Scottish households, as the cross-subsidy that existed under Hydro Benefit would continue to keep end-user electricity prices in SHE's area lower than they would otherwise be. It was suggested in section 3.7 that up to 19,000 households, or an additional 15% in absolute terms, would have become fuel poor following to an average electricity price rise of 7% in northern Scotland.

3.11 The direct costs of implementing this option are small relative to the size of the annual subsidy. Ofgem would be required to assess the impact of the new subsidy on the GB SO's charges and supervise the transfer of the funds raised to SHE Power Distribution. Since the charges levied by both the GB SO and SHE are already subject to regulatory scrutiny, additional monitoring costs should be limited. Likewise, the additional cost faced by the GB SO is also small since it already levies charges on all electricity suppliers in Britain. The cost of evaluating the principle and the level of the cross-subsidy in future would be borne by the DTI.

3.12 Assuming that suppliers pass on all of the additional costs implied by the new cross-subsidy proposed in Section 184 of the Energy Act, the price of electricity for end-users throughout Britain will be higher than would be the case under Option I. Total expenditure by domestic end-users of electricity in the United Kingdom (excluding VAT) amounted to some £7.2 billion in 2002; non-domestic end-users paid a similar amount.²³ If the 2002/03 cost of Hydro Benefit were recovered in proportion to UK sectoral final electricity consumption,²⁴ then domestic end-users would have paid an additional £13.3 million (i.e., 34% of £38.6 million), which would have represented an extra 0.2% on average prices in 2002; non-domestic end-users would have paid an additional £25.3 million, or an extra 0.4% overall.²⁵

3.13 A typical domestic electricity consumer in Britain would therefore have been less than £1 per year worse off at today's prices,²⁶ although the exact impact would have varied by region and by the level of consumption. In principle, an electricity price rise nationally would tend to increase fuel poverty across Britain as a whole, but it is unlikely that a price rise of this size would have had a material effect on fuel poverty nationally. With regard to non-domestic consumers, the electricity price increase for manufacturing firms in Britain would have been equivalent to approximately 0.01p/kWh on average in 2002.²⁷ Assuming that a medium-sized firm consumes between 880MWh and 8,800MWh of electricity in a year, this increase would have represented an additional £88-880 per year depending on the level of consumption.

²² See annex 5 of HM Treasury's "Green Book" (<http://greenbook.treasury.gov.uk/>) for more information on analysing distributional impacts.

²³ Table 1.7, "2003 Digest of United Kingdom Energy Statistics", DTI. (<http://www.dti.gov.uk/energy/inform/dukes/dukes2003/index.shtml>). Data are not publicly available on a financial year or Great Britain basis.

²⁴ Table 5.1, "2003 Digest of United Kingdom Energy Statistics", DTI.

²⁵ Strictly speaking, a price increase would reduce the quantity of the good consumed and thus alter total expenditure, but it is unlikely that there would be a significant decline in electricity consumption from a fractional price rise due to electricity's low price elasticity of demand.

²⁶ Table 2.2.1, "Quarterly Energy Prices – March 2004", DTI (http://www.dti.gov.uk/energy/inform/energy_prices/contents_mar04.shtml). Data are not publicly available for Great Britain or for financial years.

²⁷ Table 3.1.2, "Quarterly Energy Prices – March 2004", DTI.

3.14 The overall economic impact of Option II is zero, ignoring the relatively small implementation costs of replacing Hydro Benefit. This is because the total loss in consumer welfare nationally exactly offsets the overall gain enjoyed by SSE (i.e., almost £40 million in 2002/03) – see section 3.15. In effect, almost £40 million is transferred from all electricity consumers in Britain to those located in northern Scotland. As a result, an increase in the incidence and degree of fuel poverty in northern Scotland is avoided, other things being equal. Furthermore, a non-monetary benefit of this Option is that Section 184 allows the Government to vary the level of the cross-subsidy in future or even to phase it out if this is held to be desirable.

3.15 It is notable that SSE is unambiguously better off under both Options I and II after March 2005. This is because SHE Power Distribution's allowed revenue has been reduced by the amount of subsidy it received from SSE Generation, so SHE's allowed revenue will rise following the end of this restriction under Option I, which means that the company may then charge its customers more through higher DUoS tariffs. There is thus no overall impact on SHE's profits because its costs and revenue would tend to increase by an equal amount; SSE Generation's profits rise, in contrast, because it no longer has to finance the cost of the Hydro Benefit subsidy. Under Option II the proposed Order-in-Council maintains the restriction in SHE's allowed revenue after 2004/05, thereby preventing the aforementioned rise in DUoS tariffs, as the source of the subsidy is transferred to all electricity suppliers in Britain; SSE Generation's profits still rise by the amount of the subsidy payment foregone. To give an indication of the net gain enjoyed by SSE, the company had operating profits of £678 million in 2002,²⁸ which implies that they would have been some 6% greater in the absence of the £38.6 million subsidy paid around that time.

4. EQUITY AND FAIRNESS

4.1 Hydro Benefit was introduced in northern Scotland explicitly for equity reasons, so the decision whether to continue or end Hydro Benefit inevitably has a social impact. As explained in section 3.7, Option I would tend to increase fuel poverty in northern Scotland and thus Great Britain overall, while Option II would avoid such an increase (although non-fuel poor households would also benefit, as they did under the previous scheme).

4.2 Indeed, it is notable that the 2002 Scottish Household Survey found that fuel poor households are more likely to be single pensioners and/or be located in rural areas, so it is probable that these particular social groups would be disproportionately affected by the immediate removal of Hydro Benefit. More generally, fuel poor households have significantly lower (weekly) incomes than all other households.

5. SMALL FIRMS' IMPACT TEST

5.1 Option I only impacts on small firms in northern Scotland insofar as end-user electricity prices would be significantly higher locally than at present. It is unlikely that only small firms would be affected by this Option. Section 1.11 estimated that the average rise would have been roughly £770 per non-domestic customer in 2002/03, although the exact magnitude of this impact would have varied in relation to the firm's electricity consumption and on the extent to which their supplier chooses to pass through an increase in DUoS tariffs. There is no impact on small firms elsewhere in the UK.

²⁸ Source: SSE 2003 Annual Report (<http://www.scottish-southern.co.uk/shareholder/corporateprofile/assets/SSEARepFull10.pdf>).

5.2 Option II has a comparatively limited impact on firms of all sizes on mainland Britain as end-user electricity prices might be around 0.4% higher than they otherwise would be, but there are no reasons why small firms would be disproportionately affected.

5.3 Small firms in Northern Ireland are not affected by either Option.

6. COMPETITION ASSESSMENT

6.1 Neither Option affects the degree of price competition within either the British electricity market or the local market in northern Scotland because each option relates directly to electricity distribution in SHE's area, which is a regulated monopoly activity. Moreover, replacing Hydro Benefit does not affect electricity supply competition because the successor scheme would be financed by all suppliers in Britain through a proportionate increase in their electricity transmission charges.

6.2 Option II would, however, provide a modest regional competitive advantage for small firms in northern Scotland on the grounds that the electricity prices they face would be fractionally lower than otherwise.

7. ENFORCEMENT AND SANCTIONS

7.1 Option I does not necessitate any enforcement action on the part of the Government or other public body. Option II requires the Government to exercise Section 184 of the Energy Act. This legislation enables, but does not oblige, the Secretary of State for Trade and Industry to establish a successor Hydro Benefit scheme at a level of her choosing.

7.2 The extent to which lower electricity distribution costs are passed on to domestic and non-domestic end-users in northern Scotland remains a commercial matter for suppliers, but the competitive electricity supply market should result in the pass-through of savings to local consumers.

8. CONSULTATION

8.1 Ofgem published a consultation document on 28 November 2003 regarding its intention to end the licence condition that underpinned Hydro Benefit. The DTI launched two consultations on the detail of the replacement scheme, including the level of the subsidy in future years – the first consultation began on 20 October 2004²⁹ and the second on 23 December 2004.³⁰ Most respondents were generally supportive of the Government's specific proposals.

9. MONITORING AND REVIEW

9.1 Section 184 of the Energy Act requires that any Hydro Benefit replacement scheme will be subject to review at three yearly intervals from the date of commencement. The level of the cross-subsidy will also be reviewed at these three yearly junctures.

10. SUMMARY AND RECOMMENDATION

²⁹ http://www.dti.gov.uk/energy/consultations/assistance_for_areas_with_high_elec_dist_costs.pdf ; http://www.dti.gov.uk/energy/consultations/annex_f_part_2.pdf ; and http://www.dti.gov.uk/energy/consultations/annex_f_part_4.pdf.

³⁰ http://www.dti.gov.uk/energy/consultations/assistance_for_areas_with_high_elec_dist_costs_2.pdf

10.1 Between 1 April 1990 and 12 January 2004 Hydro Benefit was a subsidy which ultimately benefited electricity consumers in Scottish Hydro-Electric Power Distribution's area and which was financed from the profits earned by Scottish and Southern Energy's hydro-electric generating assets in northern Scotland. This was implemented for social reasons because it had the effect of depressing comparatively high distribution costs and thus end-user electricity prices in SHE's area. In response to legal advice that the basis of Hydro Benefit did not fully comply with EU law, Ofgem was obliged to remove the licence condition that gave effect to the annual cross-subsidy.

10.2 Parliament enacted legislation that allows the Government to replace Hydro Benefit: Section 184 of the Energy Act 2004 transfers the source of the cross-subsidy to all electricity suppliers in Great Britain. The DTI is confident that this proposal is consistent with EU law. Two related consultations were launched in late 2004 on the precise details of the proposed Hydro Benefit replacement scheme, including the annual level of the cross-subsidy, to which the respondents were broadly supportive.

10.3 Given that the proposed replacement scheme would operate at around the same level as Hydro Benefit did in real terms during 2002/03 and that suppliers pass on their additional costs in full, the replacement scheme might have the effect of raising end-user electricity prices across Britain by about 0.2% for domestic customers on average (i.e., less than £1 per year per customer) and 0.4% for non-domestic customers, although the exact impact would vary between regions and size of consumer. The overall net benefit of this proposal is essentially zero because the loss in electricity consumers' welfare nationally offsets the gain received by SSE, as the source of the subsidy is transferred from the latter to the former. Consequently, a significant and possibly abrupt increase in fuel poverty in northern Scotland is avoided – up to 19,000 additional fuel poor households or 15% of the relevant total, which are likely to be rural electricity customers and pensioners. Whilst an electricity price rise in England & Wales tends to increase fuel poverty there, the magnitude would not be significant given the limited price rise.

10.4 Ignoring the distributional impact, ending Hydro Benefit might lead to an overall gain of up to £4 million per year, which is very small in relation to the £9.2 billion size of the UK market, as electricity is technically being over-consumed in northern Scotland compared to its strict economically efficient level. In addition, however, the incidence and degree of fuel poverty in northern Scotland would worsen due to an increase in average domestic electricity prices in SHE's area of around 7%, other things being equal. Given that fuel poor households generally have low incomes and are more likely to be rural and/or elderly consumers, the distributional impact can be taken into account by weighting the welfare of these households more heavily than that of non-fuel poor households. Since rising electricity prices impact more strongly on the welfare of the poorer members of society, the end of Hydro Benefit would tend to produce an overall negative net benefit.

10.5 Whilst there appears to be a trade-off between equity and efficiency in this case, the two goals can ultimately be reconciled. This is because the principal cause of fuel poverty in Scotland is the comparatively low energy efficiency of a segment of the local housing stock. Improving the energy efficiency of these dwellings is the first-best solution to the Government's and Scottish Executive's policy of eliminating fuel poverty, although such an improvement to the housing stock is unlikely to be realised quickly.

10.6 In short, replacing Hydro Benefit with a successor scheme would allow more time in which the policy goal of fuel poverty elimination could be achieved, and may therefore be preferred on social grounds.

Appendix A:

2002/03 average electricity distribution costs by region

| Distribution area | 2002/03 price control revenue | | Units distributed (GWh) | Average cost (£/MWh) |
|-----------------------|-------------------------------|--------------|-------------------------|----------------------|
| | (1997/98 £m) | (2002/03 £m) | | |
| North Scotland* | 108 | 122 | 8,491 | 14.4 |
| South Scotland | 236 | 266 | 22,332 | 11.9 |
| South West | 157 | 177 | 15,444 | 11.5 |
| South Wales | 116 | 131 | 12,643 | 10.4 |
| North Wales & Mersey | 145 | 164 | 16,756 | 9.8 |
| Southern | 271 | 306 | 32,832 | 9.3 |
| Northern | 139 | 157 | 16,974 | 9.2 |
| Midlands | 222 | 251 | 27,274 | 9.2 |
| Yorkshire | 196 | 221 | 24,268 | 9.1 |
| East Midlands | 219 | 247 | 28,949 | 8.5 |
| North West | 192 | 217 | 25,444 | 8.5 |
| London | 202 | 228 | 27,008 | 8.4 |
| Eastern | 262 | 296 | 36,262 | 8.2 |
| South East | 147 | 166 | 21,154 | 7.8 |
| GREAT BRITAIN* | 2,612 | 2,949 | 315,831 | 9.3 |
| North Scotland** | - | 161 | 8,491 | 18.9 |

Source: Annex 2, "Review of Public Electricity Suppliers 1998 to 2000 – Distribution Price Control Review – Final Proposals", Ofgem, 2 December 1999:

http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/1180_pesd.pdf

Page 45, "Electricity Distribution Price Control Review", Ofgem, 16 October 2003:

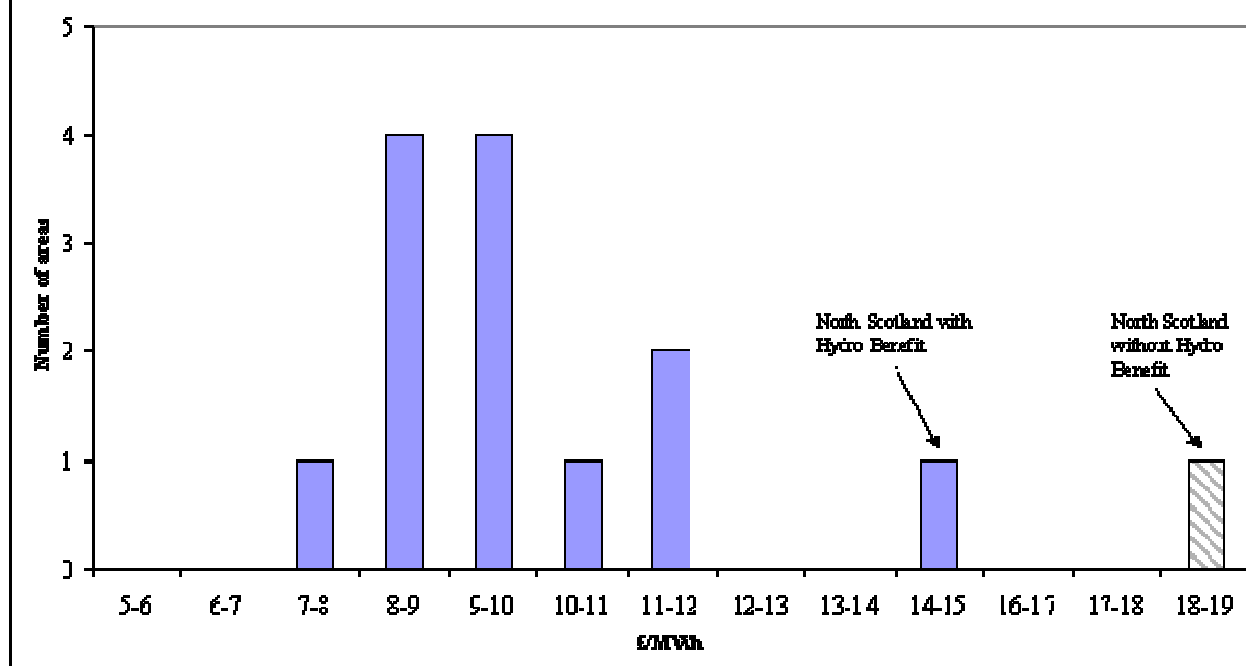
http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/4831_elec_DPCR_update_16oct03.pdf

* includes impact of Hydro Benefit.

** excludes Hydro Benefit.

N.B. DNOs are assumed to spend at their respective price control caps. Data for the 2002/03 financial year are quoted in both 1997/98 and 2002/03 prices; data are sourced from Ofgem's 1999 final proposals document, so figures exclude any subsequent adjustments such as for over-/under-recovery, impact of loss incentive arrangements, licence fees, bad debts, etc. Average cost per unit of electricity distributed is quoted in 2002/03 prices.

Appendix A: Frequency of Regional Average Distribution Cost, 2002/03



Appendix B:

2002/03 total customer numbers and distribution network length

| Distribution area | Customers (000s) | System length (km) | Length (km) per 1,000 customers |
|----------------------|------------------|--------------------|---------------------------------|
| North Scotland | 676 | 44,919 | 66.4 |
| South Scotland | 1,938 | 65,597 | 33.8 |
| South West | 1,446 | 48,065 | 33.2 |
| South Wales | 1,066 | 33,547 | 31.5 |
| North Wales & Mersey | 1,448 | 45,474 | 31.4 |
| Southern | 2,726 | 74,960 | 27.5 |
| East Midlands | 2,437 | 66,896 | 27.5 |
| Yorkshire | 2,156 | 58,744 | 27.2 |
| Eastern | 3,387 | 92,123 | 27.2 |
| Midlands | 2,307 | 60,250 | 26.1 |
| North East | 1,528 | 39,877 | 26.1 |
| North West | 2,282 | 58,310 | 25.6 |
| South East | 2,146 | 49,522 | 23.1 |
| London | 2,120 | 30,725 | 14.5 |
| GREAT BRITAIN | 27,663 | 769,009 | 27.8 |

Source: Page 45, "Electricity Distribution Price Control Review", Ofgem, 16 October 2003:
http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/4831_elec_DPCR_update_16oct03.pdf

Appendix C:
Annual level of Hydro Benefit

| Year | Subsidy (£m) |
|---------|--------------|
| 1995/96 | 29.9 |
| 1996/97 | 31.0 |
| 1997/98 | 31.7 |
| 1998/99 | 32.8 |
| 1999/00 | 33.9 |
| 2000/01 | 39.1 |
| 2001/02 | 38.9 |
| 2002/03 | 38.6 |

Source: Scottish and Southern Energy.

Appendix D:
2002 and 2003 typical domestic electricity bill of a medium-sized standard credit consumer.

| Distribution area | Annual bill (£) | |
|-------------------|-----------------|------|
| | 2002 | 2003 |
| North Scotland | 361 | 366 |

Source: Calculations based on table 2.2.3 of March 2003 and March 2004 editions of "Quarterly Energy Prices", DTI: http://www.dti.gov.uk/energy/inform/energy_prices/index.shtml

N.B. A medium-sized domestic customer is assumed to be one who consumes 4,400kWh locally per year. This is largely due to the lack of a gas distribution network in the region, which means that consumers in North Scotland typically use a third more electricity for heating and cooking than elsewhere in Great Britain.

Appendix E:

Incidence of fuel poverty in the Scottish Hydro-Electric distribution area by local authority in 2002

| Unitary Authority | Number of fuel poor households (000s) | Proportion of fuel poor households (%) |
|----------------------|---------------------------------------|--|
| Aberdeen City | 8 | 8 |
| Aberdeenshire | 15 | 17 |
| Angus | 8 | 16 |
| Argyll & Bute* | 8 | 21 |
| Clackmannanshire | 2 | 10 |
| Dundee City | 9 | 13 |
| Fife* | 17 | 12 |
| Highland | 18 | 21 |
| Moray | 8 | 21 |
| North Ayrshire* | 7 | 11 |
| Orkney | 3 | 31 |
| Perth & Kinross | 9 | 14 |
| Shetland | 2 | 25 |
| Stirling* | 4 | 11 |
| West Dunbartonshire* | 3 | 8 |
| Western Isles | 4 | 34 |
| TOTAL | 125 | 17 |
| Scotland | 286 | 13 |

Source: Table 8.10, "2002 Scottish House Condition Survey – Local Authority Report", Communities Scotland:
<http://www.shcs.gov.uk/pdfs/LARRChap08.pdf>

* Unitary Authority lies partly within Scottish Power distribution area (i.e., South Scotland).

11. Declaration

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed by

Mike O' Brien

Mike O' Brien
Minister for Energy

Date: 5th March 2005

12. Contact point:

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