



**ENERGY EFFICIENCY: NEW STANDARDS OF
PERFORMANCE**

CONSULTATION PAPER

JANUARY 1998

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FOREWORD

The Energy Efficiency Standards, which I have set for public electricity suppliers, have proved to be effective in promoting the efficient use of electricity by customers, and are making a useful contribution to improving the nation's energy efficiency. The present Standards apply until 31 March this year. I indicated in my proposals for the supply price restraint to apply from April 1998 to March 2000 that it would be appropriate to set new Standards for that period.

This consultation paper concerns the details of the new Standards. The Energy Saving Trust, which is closely involved in the present Standards, was invited by OFFER to advise on drawing up the new Standards, and this consultation paper reflects the Trust's advice. I am grateful to the Trust for the report it has provided on this, which is being published at the same time as this consultation paper.

It would be helpful to have any views by 27 February on the matters raised by this consultation paper or by the Trust's report. This would allow for Standards to be set to take effect from 1 April. Replies should be sent to:

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Birmingham
B16 8QG

I should like to publish the comments received by placing them in the OFFER Library. Please make it clear whether any part of your comments should be regarded as confidential.

PROFESSOR S C LITTLECHILD
Director General of Electricity Supply

January 1998

1. **INTRODUCTION**

- 1.1. The Director General has powers under section 41 of the Electricity Act to set Standards of Performance for public electricity suppliers (PESs) to promote the efficient use of electricity. He is required to consult PESs and others affected before setting such Standards. The consultation which took place between September 1996 and August 1997 on the arrangements for the supply price restraint from April 1998 to March 2000 considered whether Standards of Performance should apply during the period of the restraint and the appropriate arrangements for funding new Standards. The Director General concluded that it would be appropriate to set Standards to apply for that period. The present consultation document concerns the details of the new Standards, in the light of advice from the Energy Saving Trust (the Trust). A report by the Trust setting out its advice is available with this consultation document.

2 PRESENT STANDARDS

Purpose of present Standards

- 2.1. PESs in England and Wales are at present subject to Energy Efficiency Standards which the Director General set in March 1994 as part of the supply price control effective from 1994. Scottish PESs are subject to Standards which were set as part of the Scottish Supply Price Control. The reviews for these price controls considered carefully the case for promoting energy efficiency by means of Standards of Performance. The Director General concluded that there was scope for improved energy efficiency by franchise customers. The fact that competition between electricity suppliers was not yet allowed in this market meant fewer sources of advice to customers and less variety in the terms on offer. Franchise customers might be less informed than were non-franchise customers about the potential for energy efficiency and less able to finance the necessary initial investment.
- 2.2. It was therefore reasonable to oblige the PESs to do more in this area, provided that benefits flowed to franchise customers who would be paying the cost. However, it was necessary to bear in mind the redistributive effect of PESs' expenditure in meeting Standards. All franchise customers would pay, but only some would benefit from lower individual fuel bills. The Director General set Standards which could be funded by means of a £1 per customer annual allowance included in the 1994 supply price control, bearing in mind that a significantly higher allowance for energy efficiency purposes would raise issues more appropriately dealt with through general fiscal policy.
- 2.3. The purpose of the Energy Efficiency Standards was not to replace the judgement of customers in a competitive market, and it was important not to put the PESs at a competitive advantage over other suppliers. Rather, it was reasonable to stimulate interest and activity in a market that was not then open to competition and where customers consequently did not have the benefit of information and offers from rival suppliers.

Structure of present Standards

- 2.4. The present Standards set individual energy savings targets expressed in gigawatt hours (GWhs) for each PES, to be met by projects implemented by 31 March 1998. The energy savings do not have to be delivered by that date, insofar as the Standards can be met by the energy savings which projects in place by 31 March 1998 are forecast to achieve over their lifetime. The Standards provide for the Trust to play an important role in independently assessing, and advising OFFER on, the energy savings which it is reasonable for PESs to claim from individual projects. The Trust assesses each project both before it is launched and when it is completed. It is on the basis of these assessments that the companies' performance against the Standards is measured.

- 2.5. The Standards set criteria for the selection of projects, including value for money and cost-effectiveness, and the need to take into account the interests of customers (in particular elderly and disabled customers, those in rural areas and those who have payment difficulties). Other criteria include the need to take into account the effect of projects on the physical environment and the desirability of demonstrating a variety of methods of achieving energy savings. PESs are responsible for achieving the Standards in accordance with these criteria. The majority of projects under the present Standards are projects which PESs have themselves developed. The Trust advises PESs on potential projects which might be undertaken and has itself developed various framework schemes which PESs implement locally, as well as developing and arranging national projects on behalf of all PESs.

Performance under the present Standards

- 2.6 Table 1 (see Annex for tables) shows the energy savings required of each PES and the value of the allowance for the Standards in the supply price control for that PES. Table 2 shows the energy savings forecast from, and the cost of, the 209 projects on which PESs had submitted completion reports by 31 December 1997. Table 3 gives similar information for the 478 projects approved by the same date, on the majority of which completion reports were still due. This data is subject to confirmation on completion of projects.
- 2.7 Tables 2 and 3 also show the cost of achieving the Standards measured by the average cost to each PES of saving one kWh of electricity. In the case of projects on which completion reports had been submitted, the average (including national schemes) was 1.40p and the range for individual PESs was 1.18p - 1.62p. In the case of approved projects, the average cost over all PESs (including national schemes) was 1.44 pence per kWh (p/kWh) saved. The range for individual PESs was 1.29p - 1.60p. This variation is due to various factors, including regional cost differences and the type of measures undertaken. The data from approved projects covers a larger number of projects, but the data from the completed projects may be more useful because it reflects actual costs.
- 2.8 The data in Tables 2 and 3 on the cost to the PESs of saving a unit of electricity is a useful performance indicator. However, it does not measure the full cost of achieving the energy savings, because it does not fully take into account all the non-PES costs in the case of the large number of projects which PESs undertake in collaboration with other parties or to which customers contribute financially. The Trust has calculated the full cost to be 1.68p per kWh saved.
- 2.9 The present Standards allow, and indeed encourage, companies to undertake a variety of approaches to promote the efficient use of electricity. Cavity wall and loft insulation together with low energy lighting account for a substantial proportion of the measures which PESs have undertaken, and within these categories companies have carried out a diverse range of projects, of varying sizes,

aimed at different customer groups, and in collaboration with a wide range of parties, including local authorities, housing associations and charities. Table 4 indicates the number of planned and actual installations within each category of project in respect of projects approved by 31 March 1997.

- 2.10 Before the present Standards were set, the Trust advised that around 25 per cent of the energy savings might be achieved by means of projects aimed at promoting the use of energy efficient appliances.’ In the event, it has not been possible to bring forward appliance projects which meet the criteria of the Standards on the scale envisaged. It is disappointing that a wider range of appliance projects has not been achieved. On the other hand, when the Standards were set, it was recognised that it was not possible to predict the scope for particular measures; indeed, one of the purposes of the Standards was to learn more about the costs and market potential of different ways of improving the efficient use of electricity.
- 2.11 Table 5 gives details of the customers by category who are forecast to benefit from projects approved as of 31 March 1997. Ten per cent of PES expenditure is on projects for non-domestic customers (below 100kW). An estimated 60 per cent of PES expenditure on projects for domestic customers is accounted for by projects for lower income groups.
- 2.12 Table 6 shows the Trust’s estimates of the forecast value of benefits to customers from projects approved by 31 March 1997. The present value of the benefit to customers in future electricity cost savings and improved comfort is estimated at some £388 million, allowing for project costs borne by customers.
- 2.13 The Trust has also estimated the environmental benefits of the Standards. Table 7 shows the forecast environmental impact of projects approved by 31 March 1997. Over seven million tonnes of carbon dioxide is forecast to be saved, on the basis of current conversion factors.

Allowance of £1 per customer

- 2.14 The present Standards were set at a level calculated by the Trust to require PES expenditure equivalent to the £1 per customer annual allowance in the supply price control, based on various key assumptions including the mix of measures which PESs would undertake, and the percentage of non-PES funding of projects. In the event, a number of these assumptions have not been borne out in practice. The failure to bring forward appliance projects - which have a relatively high cost per kWh saved - on the scale originally assumed (25 per cent of total energy savings) is a notable example.
- 2.15 During 1996, OFFER reviewed the position with the Trust and the PESs. As a result, all companies agreed that any funds which remained from the £1 per customer allowance after achieving the Standards would be spent on energy efficiency. OFFER, and the Electricity Consumers’ Committees, welcome this

undertaking, which is now being put into practice as PESs meet their targets under the Standards.

3 NEW STANDARDS IN THE COMPETITIVE MARKET

Views of respondents to consultation

- 3.1 The supply price restraint consultation asked whether it would be appropriate to continue to support energy efficiency through Standards of Performance for PESs. Responses were mixed. The majority view, particularly amongst consumer and environmental groups, was that, on the available evidence, the present Standards had proved to be effective, and that they should be extended. Against this, most PESs were concerned about whether new Standards would be compatible with supply competition, particularly insofar as this would expose them to costs and obligations not faced by second tier suppliers. Another PES concern was that uncertainties over the number of customers who would switch to second tier suppliers would make it difficult to set Standards based on the number of customers supplied by PESs.

Director General's conclusions

- 3.2. The Director General concluded that it would be possible to continue with the present arrangements without any significant adverse effect on the PESs' competitive position.
- 3.3 The opening up of competition after 1998 will allow suppliers to offer a variety of terms to customers, not least terms relating to the provision of energy services and energy efficiency packages, perhaps involving new pricing structures or the installation of energy saving measures. A variety of terms emerged in the above 100 kW market when it was opened up to competition in 1994. Competition in supply can therefore assist below 100 kW customers to become better informed of the potential for energy efficiency. Electricity suppliers may also offer finance packages for energy efficiency to below 100 kW customers. Competition will also give opportunities for a single supplier to offer both gas and electricity. This may encourage energy efficiency through fuel switching.
- 3.4 Competition will however take time to develop after 1998. The Director General concluded therefore that there was a case for a continuation of the Standards, and arrangements to fund them, for a transitional period after 1998, provided this could be done in a manner and on a scale that does not unduly distort competition or adversely affect the interests of customers. The Director General indicated that schemes should be focused on domestic customers covered by the supply price restraint, particularly those least likely to benefit from competition initially.

The competitive market

- 3.5 The new Standards of Performance need to be consistent with the opening up of supply competition in 1998. This requirement particularly affects the arrangements for the marketing and the delivery of projects.

- 3.6 Some respondents expressed concern about the possibility of PES customers having to pay to provide benefits for the customers of second tier suppliers. However, the extent of this is not likely to be significant in the transition to competition. There is also an opposite and potentially more serious concern that a PES might offer Standards projects to particular customers in order to retain them or to win them back as supply customers; or for other commercial reasons. It is therefore important that customers should not be tied in, or believe that they are tied in, to taking supply from a company which has provided them with assistance under the Standards, and that funds which companies have been allowed to raise for Standards purposes should not be used to subsidise supply charges.
- 3.7 The July 1997 consultation paper said that PESs should not design projects targeting second tier customers nor should they use the Standards as a device to retain market share. In general terms therefore, PESs should make projects available to customers regardless of who supplies electricity to the customer. If a PES uses its customer database to market projects, customers of second tier suppliers who apply for such projects and meet the criteria should not be excluded. In some cases, it would not be practicable to restrict projects to a PES's own customers - for example in the case of projects delivered by charities and retailers.
- 3.8 In the competitive supply market there will be opportunities for energy services companies (ESCOs) to offer customers an integrated service covering the supply of electricity (and possibly other fuels as well, such as gas) and measures to assist customers to use energy more efficiently. The July consultation paper indicated that support for ESCOs under the Standards would have to be consistent with competition in the supply of electricity and in the supply of energy efficiency services. It indicated that Standards funding should not be used to subsidise electricity supply or tie in customers, nor should it undermine the activities of other energy efficiency providers.
- 3.9 In line with these criteria, it would not be appropriate for the Standards to recognise the energy savings which might arise where a PES provides financial assistance (either by means of a grant or a low interest loan) to customers who have a contract covering the supply of electricity by the PES and the supply of energy efficiency services. However, it would be reasonable to allow PESs to count energy savings arising from ESCO projects which are financially supported by the PES, but where the PES does not provide the electricity supply. It would also be reasonable to recognise the energy savings from ESCO projects where no financial assistance to the customer is involved and the terms for electricity supply are not more favourable than those offered to non-ESCO customers. In either case, the savings could be calculated on the same basis as that used for other projects, by forecasting the energy savings from the measures which the ESCO plans to deliver. Such arrangements will help to ensure that the Standards properly reflect the contribution which ESCOs can potentially make to energy efficiency, consistent with the promotion of competition in this area.

4 BASIS FOR NEW STANDARDS

Methodology

- 4.1 OFFER invited the Energy Saving Trust to advise on the structure and level of the energy saving targets which would be appropriate for new Standards, taking account of the project costs and opportunities for each PES, and in the light of achievements under the present Standards. The Trust has recommended that new Standards should follow the present ones in that the energy saving targets for each PES should be met by forecast savings from projects brought forward by PESs using an assessment methodology approved by the Trust. The Building Research Establishment's BREDEM model would remain the basis for assessing insulation schemes. For lighting and appliances, energy labels and monitored data from the present Standards - where available - would be used. As under the present Standards, the energy savings would be discounted over the life of the project.
- 4.2 The Trust has derived targets/ranges for the new Standards on a similar basis to that used for setting the present Standards, but has made greater allowance for regional variations in the opportunities available to PESs. The Trust has discussed with each company the mix of measures which it plans for the new Standards (as between lighting, insulation and appliances), and has applied an estimated cost per kWh saved to each element of the mix to derive a GWh target/range for each PES. Figures for each PES are given in Table 8. The Trust is discussing these targets/ranges with PESs in the light of the opportunities available to each PES and is continuing to refine the figures.
- 4.3 The Trust has pointed to the uncertainty which inevitably exists regarding the mix and cost of schemes which PESs will in practice bring forward to meet the Standards. It has therefore endorsed the offer by the PESs to spend all of the £1 per customer funding assumed for the new Standards, even if this takes them beyond the GWh targets.

Funding base

- 4.4 The supply price restraint consultation indicated that the new Standards should be funded by PES customers covered by the price restraint (ie domestic customers and business customers with annual demand under 12,000kWh). Consistent with the supply price restraint, a 5 per cent loss of customers by PESs to second tier suppliers during 1998-2000 is assumed. The levels of funding for the Standards are set out in Table 8 (see Annex).

Low income customers

- 4.5 The present Standards assumed that 35 per cent of energy savings would come from projects for low income customers, but in practice actual spend has been closer to 60 per cent. The percentage of expenditure on projects for low income

customers under the new Standards expected by PESs varies between the companies, ranging from 60 to 80 per cent. The Trust’s advice on the level for the Standards reflects this variation. Low income customers take more of the benefits from insulation in the form of higher comfort (rather than energy savings) than do high income customers. Low income customers are also less likely to be able to contribute to project costs. Assuming a higher proportion of PES expenditure on low income customers under the new Standards therefore reduces the level of the energy savings target which it would be ‘appropriate to set. The Trust estimates that, across PESs as a whole, the percentage of project expenditure on low income customers will be nearly 70 per cent. Whilst it would not be appropriate to set Standards based on a uniform percentage of expenditure on projects for low income customers for all PESs, each PES should take into account the needs of different customer groups.

Project mix

4.6 An important aspect of the Trust’s advice is that the new Standards should enable PESs to undertake a mix of projects, particularly as between:

- a) insulation which helps those with the highest electricity bills and provides comfort benefits;
- b) lighting (which overall is usually the most cost effective option in terms of the cost of achieving energy savings and tends to provide greater unit price savings for customers);
- c) appliances, which account for approximately half of electricity used in the home.

4.7 To ensure that PESs undertake a spread of projects in these three main categories, the Trust has recommended that 50 per cent of the energy savings required of each company should be based on separate targets for insulation, lighting and appliances. The ranges, which allow for regional variations in the potential for insulation measures, are as follows:

	%
Domestic Insulation	5-20
Domestic Lighting	15-30
Appliances, non-domestic and other schemes	12
Total:	50

The remaining 50 per cent is for projects in any of these categories which reflect the particular opportunities available to each PES.

- 4.8 Appliance projects are, in general, more expensive than lighting and insulation per kWh of electricity saved. The Trust expects that, under the present Standards, appliance schemes will account for around 6 per cent of the energy savings from approved projects. Accordingly, requiring at least 12 per cent of the energy savings under the new Standards to come from appliance projects implies higher average costs than have been experienced under the present Standards.
- 4.9 It seems sensible to have minimum targets for each PES in the three broad categories proposed by the Trust. Table 8 indicates, however, that in meeting their total GWh targets, PESs differ widely in the percentage contribution which they expect each of the categories to make. OFFER would welcome comments on the proposal for minimum targets in each of the three categories as an approach to drawing up the Standards, and on the distribution between categories proposed by PESs.
- 4.10 The present Standards assumed that, over the PESs as a whole, 21 per cent of the cost of the Standards would be accounted for by expenditure on indirect project costs. Within this overall figure, the percentage of expenditure assumed for indirect costs varied between PESs, according to PES size. In practice, the percentage of expenditure on indirect costs for projects approved up to 31 March 1997 has been 25 per cent over the PESs as a whole. The Trust has advised that the new Standards should be based on an assumption of 25 per cent expenditure on indirect costs over the PESs as a whole, with variations again allowed depending on PES size. OFFER understands that some PESs have argued that their indirect costs could be higher than allowed for by the Trust, but believes that it is reasonable to seek to contain indirect costs along the lines proposed by the Trust.

Energy savings targets

- 4.11 The present Standards are based on an energy savings target for each PES, which the PES meets by means of the energy savings forecast from a range of projects which meet the criteria of the Standards. The supply price restraint consultation concluded that the present scheme was familiar and appeared to be working well and that it would be sensible to continue on the present basis.
- 4.12 In its advice to OFFER, the Trust has advised that the new Standards should be set in terms of GWh energy savings targets for PESs which can be achieved through the energy savings forecast from projects. OFFER believes that, for the sake of continuity as well as practicality, it would be appropriate for the new Standards to be formulated in similar terms to the present Standards, ie to set an energy savings target for each PES, which it would have to meet from the energy savings forecast from projects put in place by March 2000 which meet the criteria of the Standards.

Cost saving

- 4.13 An alternative basis might be to set Standards based on cost savings for customers. The Trust's report notes that cost savings for customers vary by type of efficiency measure, depending on the time of day when electricity is used. Standards which targeted cost savings for customers, as opposed to Standards based on energy savings directly, would tend to exclude insulation projects, which in the main save off-peak (ie lower price) electricity. Standards aimed at cost savings for customers would also significantly reduce the range of projects and would mean that customers with the largest electricity bills, including many on lower incomes, would receive little assistance from the Standards. OFFER endorses the Trust's view that continuing with an energy savings target would be more appropriate than switching to a cost savings target. An energy savings target allows help to be given to customers with the highest electricity bills, and it encourages a range of projects to be undertaken and reflects the project opportunities which are available given the different circumstances of PESs.
- 4.14 Whilst it is proposed that the Standards should continue to target energy savings, cost savings for customers should also be taken into account. The Trust has advised that minimum levels of energy savings should be required of PESs from lighting and appliances schemes. This would ensure a minimum level of peak time electricity savings. In addition, it might be appropriate to set a secondary target for PESs specifying a minimum level of cost savings to be achieved from projects, consistent with the prime energy savings target. OFFER would welcome views on this.
- 4.15 In any event, it is appropriate carefully to monitor cost savings for customers. The Trust already monitors cost savings for customers over the Standards as a whole (see paragraph 2.12). OFFER therefore proposes to invite the Trust to develop further the arrangements for monitoring and reporting on the cost savings for customers achieved under the Standards.

5 FINANCIAL ISSUES

Project funding

- 5.1 The present Standards give companies credit, in terms of the level of energy savings which they are awarded, for the financial contribution to project costs made by other parties, including customers, landlords, equipment suppliers, etc. For example, if a PES contributes 50 per cent of the costs, it is awarded 65 per cent of the energy savings. This encourages companies to seek funding from outside sources. When the present Standards were set, it was assumed that other parties would on average meet 48 per cent of direct costs of projects. To date, however, they have met only 40 per cent. The present Standards also require that projects should generally be at least 20 per cent funded by PESs to qualify.
- 5.2 OFFER invited the Trust to assess the scope for raising the level of non-PES funding of projects, and to advise on whether the incentive on PESs to use other funding might be strengthened. This might minimise the risks to competition and could help to promote the development of energy services on a commercial basis.
- 5.3 The Trust informed OFFER that, in its opinion, the most effective way of encouraging PESs to maximise other funding would be to give PESs full credit for the energy savings from projects, regardless of the percentage of project costs met by the PESs, subject in most cases to a 20 per cent minimum. Adopting this approach would have allowed the Trust to recommend higher targets for the Standards. However, companies have argued that, regardless of the credit they are given, in practice it is not possible to attract a higher level of outside funding and that changes to the present system might discourage PESs from undertaking projects for low income customers, from whom it would be more difficult to obtain a contribution to the cost of the projects. The Trust has therefore recommended no change to the current method of accrediting savings.
- 5.4 The targets for PESs are sensitive to the percentage of non-PES funding assumed. The Trust's advice is based on common levels of outside funding under the new Standards for all companies for each of the main project categories, for example 30 per cent outside funding for social housing insulation schemes, and 50 per cent outside funding for lighting schemes for high income groups. OFFER is aware that some PESs are concerned that this will require them to attract more outside funding than they have achieved under the present Standards. It nonetheless believes that the experience of other companies shows a higher level of outside funding to be achievable, and that the Trust's assumptions on the level of outside funding are reasonable.

PES expenditure

- 5.6 The Trust has endorsed the offer by the PESs to commit to spend on energy efficiency all of the £1 per customer funds assumed for the new Standards.

OFFER believes that such a commitment is helpful, particularly in view of the difficulties of predicting the exact mix of schemes, the level of outside funding and other factors affecting PES costs.

Cost-effectiveness

- 5.7 The present Standards include important cost-effectiveness criteria which projects must meet. The Director General proposes to proceed on the same basis with the new Standards. PESs should select only proposals for projects under which the aggregate benefits to customers generally are expected to exceed the aggregate costs of the project; and in selecting projects, PESs should take into account the interests of consumers. This means that a project should not be undertaken if it raises costs for customers who take part, nor if the total financial cost of the project exceeds the total financial benefits. As now, environmental externalities would not be counted. The Trust advises that in practice no project under the Standards should cost more than 4 p/kWh saved, or more than 3.4 p/kWh saved in the case of insulation measures.

6 MONITORING ISSUES

- 6.1 Projects under the present Standards are required to include arrangements for monitoring energy savings (as well as customer satisfaction and quality). This was included because OFFER considered it important that there be appropriate monitoring to allow the effectiveness of projects to be assessed and to inform future energy efficiency policy. In practice, energy monitoring has proven difficult because of time delays in collecting data, the small size of some projects, and the many external factors which influence energy consumption, such as changes in occupancy and usage patterns. The lack of robust monitoring results from the present Standards is likely to make it more difficult for PESs to demonstrate the potential benefits of energy efficiency to customers.
- 6.2 The supply price restraint consultation indicated that the monitoring results from projects carried out under the present Standards should be taken into account when setting the new projects. The Trust has since advised that it is not possible for the new Standards to take account of monitored performance under the present Standards to any significant extent. Nonetheless, it is important that the arrangements for monitoring projects under the existing Standards should be completed: and PESs must meet their existing obligations. For the new Standards, it is proposed that the Trust be invited to develop revised arrangements for the monitoring of selected projects, in order to provide more useful and robust results than achievable by extending PES monitoring of all projects.

7 PROJECT ISSUES

CHP

- 7.1 Under the present Standards, 10 CHP projects have come forward involving PES costs of £1 million. The Trust has advised that the present arrangements, whereby CHP projects which substitute for electric heating qualify for the Standards, should continue. It would be appropriate for this arrangement to continue but it is not necessary to set specific CHP targets.

Fuel substitution etc

- 7.2 Under the present Standards, up to 25 per cent of each PES's energy savings can be savings of fuels other than electricity where this is due to the efficient use of electricity (ie fuel substitution). The Budget Heating Scheme is the only significant fuel substitution project launched to date but it has proved difficult to market. The Trust has advised, nonetheless, that fuel substitution schemes should be allowable under the new Standards. OFFER agrees, subject to the present criteria (ie primary energy savings and cost savings for customers).
- 7.3 The Trust has recommended that the new Standards should recognise gas savings (and savings of other fuels apart from electricity) where these savings arise incidentally from projects which save electricity. The predominant savings would have to be electricity - for example a block of flats which is mainly electrically heated, but where some gas might also be saved. OFFER is sympathetic to savings of other fuels being counted, where this improves the overall cost effectiveness of the Standards. If savings of other fuels were to be allowed, it is proposed that the percentage of the Standards targets which can be met by savings of other fuels (on top of that allowed through fuel substitution) should be limited to 10 per cent, with a limit per project of 25 per cent.
- 7.4 The Trust has also recommended that the electricity savings counted from projects should include indirect savings, not just savings achieved for customers who take part in projects. For example, in the case of energy efficient washing machines, recognition would be given not only to the electricity saved by the washing machine users, but also to the electricity saved at water company pumping stations. OFFER is sympathetic and invites views.

New technologies etc

- 7.5 The present Standards are based on projects using proven technologies which deliver predictable energy savings. It is proposed that the same should apply to the new Standards. However, the Trust has advised that up to 0.5 per cent of funds be allowed for relevant research and development, for example to test savings from new technologies. OFFER would welcome views on this.

- 7.6 The present Standards allow for the provision of information, advice and education when installing energy efficiency measures but do not count stand alone advice and information. OFFER recognises the importance of these activities, but they appear to be well covered by the Local Energy Efficiency Advice Centres and the PESs' Codes of Practice on energy efficiency advice. It is accepted that projects should include appropriate project-related advice, but free standing advice would not count towards the Standards.

8 CONCLUSIONS

8.1 OFFER would welcome comments as soon as possible (and not later than 27 February) on this consultation paper and the Trust's report. It also welcomes views on:

- a) the proposed minimum levels of targets for project categories and the distribution between categories proposed by PESs (paragraph 4.9);
- b) whether it would be appropriate to set a secondary target for PESs specifying a minimum level of cost savings to be achieved from projects (paragraph 4.14);
- c) whether indirect electricity savings should be recognised (paragraph 7.4); and
- d) how far to allow expenditure on research and development to count for the Standards (paragraph 7.5).

8.2 In the meantime, the Trust will be having further discussions with individual PESs in order to refine the targets which might be set. OFFER aims to finalise the Standards in March.

ANNEX

TABLE 1: PES SAVINGS REQUIREMENTS

PES	GWh Savings Requirement	Special Allowance (£m)
Eastern	758	12.5
East Midlands	556	9.1
London	461	7.9
Manweb	330	5.5
Midlands	550	9.0
Northern	348	5.8
NORWEB	538	8.8
SEEBOARD	469	8.0
Southern	622	10.5
SWALEC	224	3.8
South Western	319	5.3
Yorkshire	500	8.2
England & Wales Total	5,675	94.4
ScottishPower	326	5.4
Hydro-Electric	102	1.9
Scotland Total	428	7.3
Great Britain Total	6,103	101.7

Schemes Completed To 31st December 1997

PES	Savings to PESs GWh	Cost to PESs £	Average cost in p/kWh to PES	Carbon saved tonnes	Cost per tonne carbon saved £/tC	Schemes completed *
Eastern	160	£2,211,075	1.38	64,274	£34	6
East Midlands	99	£1,396,894	1.41	37,144	£38	2
London	228	£3,541,203	1.55	80,830	£44	24
MANWEB	35	£513,139	1.45	17,587	£29	1
Midlands	191	£2,251,937	1.18	80,001	£28	13
Northern	184	£2,566,156	1.39	61,817	£42	21
NORWEB	462	£6,189,046	1.34	163,210	£38	54
SEEBBOARD	198	£2,868,445	1.45	71,906	£40	15
Southern	242	£3,712,831	1.53	93,618	£40	8
SWALEC	138	£2,225,138	1.62	47,650	£47	16
SWEB	159	£2,017,830	1.27	62,718	£32	21
Yorkshire	313	£4,119,324	1.31	112,079	£37	10
Scottish Hydro-Electric	29	£473,975	1.62	11,004	£43	6
Scottish Power	26	£375,655	1.42	11,593	£32	0
Totals	2,466	£34,462,649	1.40	915,431	£38	209

Schemes Developed by the Trust

(National schemes are run by the Trust on behalf of PESs; framework schemes are run locally by PESs)

National Schemes	624	£8,984,057	1.44	303,403	f30	12
Framework Schemes	35	£682,741	1.93	11,420	f60	19
Totals	659	£9,666,798	1.47	314,823	f31	31

**The final column indicates the number of schemes approved or completed by each PES, excluding National schemes, which are only included in the Total.

Source: Energy Saving Trust

Schemes Approved* To 31st December 1997

PES	Savings to PESs GWh	Cost to PESs £	Average cost in p/kWh to PES	Carbon saved tonnes	Cost per tonne carbon saved £/tC	Statements of Method approved by OFFER**
Eastern	927	£12,392,165	1.34	294,513	£42	24
EMEB	585	£8,735,076	1.49	193,102	£45	16
London	628	£8,975,719	1.43	189,972	£47	56
MANWEB	331	£4,764,442	1.44	105,569	£45	26
Midlands	496	£6,395,745	1.29	178,236	£36	40
Northern	385	£5,370,947	1.39	126,381	£42	38
NORWEB	663	£9,469,944	1.43	224,459	£42	72
SEEBOARD	476	£6,901,773	1.45	164,536	£42	24
Southern	635	£10,060,298	1.58	204,451	£49	29
SWALEC	307	£4,904,741	1.60	100,062	£49	31
SWEB	362	£4,986,809	1.38	123,407	£40	39
Yorkshire	534	£8,140,483	1.53	187,324	£43	23
Scottish Hydro	116	£1,807,696	1.56	39,285	£46	30
Scottish Power	341	£4,718,688	1.39	109,303	£43	12
Totals	6,785	£97,624,527	1.44	2,240,600	£44	478

Schemes Developed by the Trust

(National schemes are run by the Trust on behalf of PESs; framework schemes are run locally by PESs)

National Schemes	1,119	£18,389,782	1.64	455,062	£40	18
Framework Scheme	290	£4,913,155	1.69	105,377	£47	76
Totals	1,410	£23,302,937	1.65	560,439	£42	94

* Includes schemes which have been completed

**The final column indicates the number of schemes approved or completed by each PES, excluding National schemes, which are only included in the Total.

Source: Energy Saving Trust

Standards of Performance data for all approved schemes to 31 March, 1997

MEASURES

Measure	Number of Installations	Total Discounted Energy Savings (GWh)	Total PES Accredited Lifetime Energy Savings (GWh)
Cavity Wall Insulation	105,895	2,235	1,958
CFLs	5043,440	2,284	1,524
Loft Insulation	67,105	1,139	1,015
Heating Controls and Storage Heater Upgrade	26,778	266	241
Hot Water Cylinder Insulation	48,999	250	221
Other Lighting measures	656,190	206	162
Draught Stripping	37,646	118	105
Plate Heat Exchanger	1,545	66	58
Combined Heat & Power	9	39	35
Double Glazing	4,536	32	25
Air Curtain Temperature Controls	1,632	33	24
Night Blinds	7,500	26	19
Efficient Refrigeration	10,500	23	19
Other Insulation measures *	817	12	9
Monitoring & Targeting	200	9	8
Replacement Pumps; Variable Speed Drives; Fans	295	4	3
Tank & Pipe Lagging (where specified separately)	1,272	6	5
Floor Insulation	818	5	4
Showers	250	1	1
Total	6,015,427	6.751	5.436

* Other insulation measures include soffit insulation. external insulation of external walls and internal insulation of external walls.

N B All figures subject to confirmation on project completion

Source: Energy Saving Trust

Standards of Performance data for all approved schemes to 31 March, 1997

SECTORS and TENURE

Sector	PES Cost (£)	%
Domestic		
Lower Income	£40,731,841	60% of domestic total
Other Income	£27,708,698	40% of domestic total
Sub-Total	£68,440,539	90% of total
Non Domestic		
Commercial	£2,678,795	36% of non domestic total
Agriculture & Industry	£1,136,774	15% of non domestic total
Communal	£1,655,250	22% of non domestic total
Public	£1,985,340	27% of non domestic total
Sub-Total	£ 7,456,159	10% of total
Total	£ 75896.698	100%

Tenure	PES Cost (£)	%
Owner Occupier	£30,209,928	44% of domestic total
Social Housing	£35,021,532	51% of domestic total
Private Rented	£ 3,209,079	5% of domestic total
Total Domestic	£68,440,539	100%

PROPERTIES

Property Type	No. with one or more insulation measure	%
Bungalow	28,546	17%
Flat	54,865	33%
Detached house	12,933	8%
Semi-detached House	39,152	23%
Terraced House	32,192	19%
Total	167,688	100%

N.B. All figures subject to confirmation on project completion

Source: Energy Saving Trust

Standards of Performance data for all approved schemes to 31 March, 1997

COSTS and BENEFITS

Costs	£	%
PES Direct Cost	£56,677,869	75% of PES total
PES indirect Cost	£19,218,829	25% of PES total
.of which marketing costs = £5,739,761 (8% of total)		
PES Total Cost	£75,896,698	67% of total costs
Third Party Cost cost to end customers	£25,792,684	23% of total costs
cost to others	£11,376,883	10% of total costs
total cost to third parties*	£37,169,567	33% of total costs
Total Costs	£113,066,265	100%

* A further £5 million has been contributed by CFL manufacturers and retailers as part of the national subsidy schemes

Benefits	£	Notes
Electricity cost savings to customers	£339,074,120	(from Table 1a)
Value of comfort improvement to customers	£74,470,000	(increased warmth valued at same rate as electricity price)
LESS cost of measures to customers	£25,792,684	
Net benefit to customers	£387,751,436	(inclusive of comfort)
Customer benefit/PES cost ratio (full)	5.11	(customer benefit inclusive of comfort)
Customer benefit/PES cost ratio (energy only)	4.13	(customer benefit exclusive of comfort)

N.B. All figures subject to confirmation on project completion

Source: Energy Saving Trust

Standards of Performance data for all approved schemes to 31 March, 1997

INDICATORS

Indicators	Assumption when Standards set *	Actual based on approved schemes to 31/3/96	Actual based on approved schemes to 31/3/97
PES proportion of total cost	52%	57%	67%
PES proportion of total savings	67%	71%	81%
Customer benefit/PES cost ratio (inclusive of comfort)	4.80	6.10	5.11
Customer benefit/PES cost ratio (exclusive of comfort)	4.10	4.99	4.13
Standards of Performance cost effectiveness ratio	1.65 p/kWh	1.35 p/kWh	1.40 p/kWh
National cost effectiveness ratio	1.96 p/kWh	1.68 p/kWh	1.67 p/kWh
Lower income (% of PES domestic costs)	35%	48%	60%
Domestic (% of PES total costs)	93%	94%	90%
Non Domestic (% of PES total costs)	7%	6%	10%
Direct costs (% of PES total cost)	79%	75%	75%
Indirect costs (% of PES total cost)	21%**	25%	25%
Programme cost per tonne of carbon saved	£ 35 (with original emission factor of 0.2kg C/kWh) £ 50 (with current emission factor of 0.14kg C/kWh)	f33	f39

* Assumptions set for England & Wales. Figures for Scotland vary slightly from this.

** Subsequently revised to 30%

ENVIRONMENTAL IMPACT

Emission	Tonnes Saved	Cost of emission saved f/tonne	Notes
Carbon lifetime savings	1,928,115	39	Current conversion factor
	1,142,430	66	Year 2000 estimated conversion factor
CO ₂ lifetime savings..	7,141,167	11	Current conversion factor
	4,231,222	18	Year 2000 estimated conversion factor
SO ₂ lifetime savings	84,426	899	Current conversion factor
NO _x lifetime savings	23,077	3,289	Current conversion factor

N.B All figures subject to confirmation on project completion

Source: Energy Saving Trust

TABLE 7

TABLE 8: ENERGY SAVING TRUST RECOMMENDATIONS

PES	PES funding (£m)	GWh target/range	GWh: % Distribution		
			Lighting	Insulation	Appliances
Eastern	5.8	314-338	30	58	12
East Midlands	4.3	221-257	40	45	15
London	3.5	169-205	65	17	18
Manweb	2.5	122-144	26	60	14
Midlands	4.2	246	42	30	28
Northern	2.5	153	60	22	18
NORWEB	4.1	208-236	29	54	17
SEEBOARD	3.7	210-232	28	52	20
Southern	4.9	246-293	20	62	18
SWALEC	1.8	98-105	66	15	19
South Western	2.4	150	28	56	16
Yorkshire	3.9	175-227	60	10	30
Hydro-Electric	1.2	50-63	27	50	23
ScottishPower	3.3	156-194	18	61	21
Total / Average	48.1	2,519-2,843	38	43	19