

# **REPORT OF THE WORKING GROUP ON EXTENDING THE GAS NETWORK**

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## **REPORT OF WORKING GROUP ON EXTENDING THE GAS NETWORK EXECUTIVE SUMMARY**

1. There is evidence that lack of access to mains gas, which is currently the cheapest and most efficient fuel for domestic heating, contributes to keeping households in fuel poverty. Competition amongst gas transporters has given consumers choice, but it has not delivered significant extensions of the network to existing communities, and is unlikely to do so without intervention. In announcing the draft Fuel Poverty Strategy in February 2001, Ministers therefore gave a commitment to working with OFGEM “to ensure that wherever possible the gas network provides the widest viable coverage and fullest viable capacity”, and established a working group to take this forward.
2. The group, which also includes industry and consumer representatives, met for the first time in May, with the objective of submitting an initial report in October. It assembled and considered a range of information on the fuel poor and the gas network, energy sources, including material provided by Transco. DTI undertook a cost/benefit analysis of extension for the group, which also considered information about the costs and benefits of other fuel sources and the range of energy efficiency schemes available. In the light of this range of information and its discussions, the group has agreed a number of findings and recommendations, which are set out in this report.
3. The report’s key findings are that:
  - around 1.3 million of the 4.5 million British households in fuel poverty are without access to mains gas. Of 900,000 English households without gas, provision of gas central heating and, where practical, loft and cavity wall insulation could remove 600-700,000, including the great majority of the most vulnerable, from fuel poverty. Similar or greater impacts would be likely in Wales and Scotland
  - extension of the network may be particularly appropriate where certain conditions – size of community, density and clustering of housing and relatively close proximity to the existing network - coincide. Where connection to the network is inappropriate, similar results appear obtainable from insulation and central heating systems used in conjunction with other fuels, such as fuel oil, that can drive central heating radiators
  - in some cases, other measures may be enough to remove households from fuel poverty: electric storage heating and insulation would remove 300-400,000 from fuel poverty, while insulation measures alone would remove 200-300,000
4. Under current economic criteria, it is less attractive for individual households and established communities (other than new build) to benefit from gas network extension, and extensions are not, therefore, proceeding. The benefits identified at paragraph 3 cannot, therefore, be provided by existing funding and programmes alone, whilst restrictions within energy efficiency schemes, especially in England and Wales, limit the assistance that energy measures can provide to the fuel poor in non-gas areas
5. The cost/benefit analysis undertaken for the group suggests that a full-scale extension of the gas network, even were it possible, is not justified. However, the sensitivity

analyses within that appraisal and other information, including detailed research into four communities undertaken by Transco, suggests that extension would be justified in more limited circumstances. For other communities, an approach involving other fuel sources would be more appropriate.

6. The group therefore considers that a series of pilot projects should be established to test the effectiveness of extension of the network as a means of addressing fuel poverty, and that additional action be taken to assist the fuel poor in communities where extension is not feasible.

7. The report's key recommendations are that:

- the Government should develop a programme of measures to assist the fuel poor in non-gas areas. Decisions on the most appropriate measures should be taken on a case-by-case basis, depending on local circumstances
- the report provides a priority list of deprived communities in non-gas areas. This should be the basis for detailed investigation to establish the best way of assisting individual communities and households. Detailed work in communities should be linked with, and learn from, existing programmes work to ensure effective delivery and funding without overlap
- against the priority list, as refined by detailed work in communities, consortia including local authorities, the energy industry and local industry should be encouraged to develop projects and bid for funding where extension was deemed to be suitable. Depending on the approach within individual communities, sponsorship should be sought from interested parties. These approaches would defray costs and might permit access to regional funding
- the widest, most cost-effective programme to assist the fuel poor in non-gas areas entails a range of fuels and access to the range of energy efficiency and fuel poverty programmes. At present, the HEES is based upon gas and electricity solutions, and might have difficulty in sustaining extensive access by other fuels. The Government should consider broadening the scope of the HEES or providing additional funding to assist communities where gas or electricity is not the most appropriate fuel source, and increasing the HEES maxima where it is. In all cases, heating improvements should be accompanied by appropriate insulation measures.

8. A programme should, initially, be centrally funded. Ideally, such funding should permit pilot extension projects, further extension work and, to a lesser extent, other appropriate measures in the most deprived communities. It would have the scope to leverage contributions, in cash or kind, from transporters, suppliers and equipment manufacturers, as well as other public sector funding. This could provide additional funding of 25-50%. If the pilot programme showed that a larger programme to extend the gas network was desirable, such a programme should be funded either by general taxation or by a levy on existing gas consumers. The latter would require amendment of the Utilities Act. As an example, whilst the costs of the measures to remove households from fuel poverty will vary, a £50 million programme leveraging in other funding could

remove 60,000-100,000 households from fuel poverty. It could also have the scope to link with other Government programmes and targets, including its CHP target.

9. This strategy would best be taken forward by a steering group including representatives of providers of the range of fuels. Detailed work - refining the priority list, carrying out investigative work in communities, recommending appropriate measures and evaluating bids - should be contracted out to a managing organisation.

## **I. THE ESTABLISHMENT OF THE WORKING GROUP**

1. Before the publication of the draft Fuel Poverty Strategy (the final Strategy was adopted in November 2001), DTI and DETR Ministers considered a number of ancillary issues. Among other things, they noted the suggestion that lack of access to mains gas might be pushing people into fuel poverty or keeping them there by denying them access to what had become the cheapest and most efficient domestic fuel. They agreed that the Government should work with OFGEM “to ensure that wherever possible the gas network provides the widest viable coverage and fullest viable capacity”, and agreed to establish a task force to take this forward.
2. In April 2001, following discussion in the Interdepartmental Group on Fuel Poverty, a working group was established, and interested parties were invited to participate. The group, whose terms of reference are at Annex 1 and whose members are listed at Annex 2, met for the first time in May 2001. It was agreed that the group should seek to produce an interim report for Ministers by October 2001.
3. Approximately 4.5 million households in Great Britain - 20% of the total - rely on fuels other than mains gas for their energy supplies. The vast majority of these households, which are overwhelmingly concentrated in rural areas, have no access to mains gas - at least 100 communities of more than 750 households lack such access (Table 1). This limits the ability of consumers, including the disadvantaged, to choose from the range of fuels and benefit from the range of prices at which those fuels are offered. Of the predominant energy sources, natural gas tends to carry emissions and other environmental advantages, to be cheaper and to provide more affordable warmth.

**Table 1: Communities outside the gas network<sup>1</sup>**

LDZ	Settlements	Settlements	Settlements
	>150 dwellings	>300 dwellings	>750 dwellings
East Anglia	729	217	17
E Midlands	248	60	3
N London	39	8	0
North	237	85	7
North-West	94	23	2
Scotland	281	131	13
South-East	191	63	4
South	568	183	16
South-West	799	318	31
Wales	396	139	8
W Midlands	301	82	4
Yorkshire	134	32	0
<b>Total</b>	<b>4017</b>	<b>1341</b>	<b>105</b>

## **II. THE STATUTORY AND REGULATORY POSITION**

### **The statutory position**

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<sup>1</sup> Source: Transco

4. Under the Gas Act 1986, a gas transporter must, on request, connect premises within twenty-three metres of gas mains. OFGEM has a duty to ensure that all reasonable requests for gas through pipes are met, provided this can be done economically, and to ensure competition in the supply and laying of gas pipes. The Gas Act 1995 introduced competition in building spur pipes and connections to households. It provides three ways in which a household may be connected to the mains:

- by application to, and arrangement with, a gas supplier or transporter (usually arranged through a supplier)
- by a gas transporter's using a system of supplemental charges under which the cost of making the connection is recovered over a period (typically, twenty years) by an additional charge per unit of gas supplied
- by hiring a specialist company to lay pipes (commonly known as "self-lay")

5. The Utilities Act 2000 removed the limits to gas transporters operating in their own limited licence areas, with a view to stimulating competition between gas transporters, promoting the extension of the network and driving down the cost of connection. In addition, it made OFGEM's primary objective the protection of the interest of consumers, wherever appropriate by promoting effective competition. It also specifically required both OFGEM and the new Gas and Electricity Consumer Council (Energywatch) to have regard to the interests of the disabled or chronically sick; pensioners; the poor; and those living in rural areas. The Act further provided for the adjustment by the Secretary of State of charges by gas shippers, transporters and suppliers to assist disadvantaged consumers. It required OFGEM to have regard to environmental effects in carrying out its functions, and gave the Secretary of State the duty of giving OFGEM guidance on social and environmental matters.

### **Existing regulatory arrangements**

6. Competition has successfully been introduced into gas transportation connections (although consumers are locked into transportation charges once pipework is laid and connected), and ten Independent Gas Transporters (IGTs) have been licensed (and carry out c70-75% of connections to new developments). However, competition has tended to increase the number of companies carrying out work that would have taken place anyway, rather than stimulating significant extension of the network to existing communities without gas. The steady rise in connections, carried out first by local authorities, then, after nationalisation (and to a degree, prior to separation of its privatised transportation and supply businesses) by the former British Gas, has slowed almost to a halt, although new connections continue to be made to new housing developments.

7. This reflects the fact that the costs of connection to communities and individuals, whether undertaken by Transco or IGTs are ordinarily high, and beyond the willingness of residents to pay. For his part, no transporter will develop a connection on a speculative basis. A paper on the costs of infill projects provided to the group by Exoteric Gas Solutions Ltd (Annex 3) sets out an indication of average costs, both to a

transporter and a householder, provided by a self-lay company<sup>2</sup>. The vast majority of new connections are, therefore, to new housing or other developments, where the transporter is sure of an adequate return on his investment, either from immediate transportation of gas or the high expectation of future consumption. For example, each Transco LDZ carries out only one or two infill projects each year, and ordinarily only if the initial take-up rate is 60%. IGTs usually carry out infill projects only where industrial and commercial premises customers are prepared to bear a major part of apportioned costs.

8. The activities of transporters are governed by a range of regulations<sup>3</sup>, licence conditions<sup>4</sup> and, in Transco's case, price controls. Connection charges may be recovered in two ways: under the gas regulations or licence conditions. Under the regulations, charges are usually recovered by up-front payments by customers, and can only be applied for five years (that is, other households can then be connected free). Under the licence, supplemental connection charges are recovered from shippers together with transportation charges over twenty to twenty-five years. Transporters have been loth to use this method, apparently because contributions cannot be recovered from premises where pipes are laid, but no gas is consumed.

9. In its final proposals on Transco's price control, issued in September 2001, OFGEM addressed the suggestion that it give Transco additional incentives to extend the network, among other things, to assist the fuel poor. OFGEM expressed concern that, given its statutory duty is to ensure that requests for gas connections are met, provided this can be done economically, using the price control as a mechanism to encourage new rural connections would lead to inappropriate cost allocations between different customer groups, including the fuel poor. In addition, of the gas transporters, only Transco was subject to the price control. To expand its regulatory asset base to encourage extension of the network would require Transco to be a conduit for payments to itself and independent gas transporters. This raised competition concerns.

10. OFGEM consulted in August 2001 on a proposal to amend the Gas Connections Regulations to allow for a recovery period of twenty years rather than five. The consultation was issued in recognition of the fact that many people are reluctant to connect to a new gas supply in the first five years, since they know that they will have the option of connecting for a standard connection fee after five years. As a result many proposed connections do not go ahead, as the initial take-up level is too low. Amending the Regulations in this way would reduce the incentive for householders to hold back on connecting to the gas supply, and therefore would be expected to increase initial take-up. This might tilt the balance on a gas transporter's initial judgement on whether to provide a connection. As such, the group considered that the proposal was helpful, although it is not expected to contribute significantly to the extension of the network.

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<sup>2</sup> For its part, Transco has estimated that the cost per dwelling of extending the network to a community of 250 houses with 60% take-up would be £1,437 for houses within 1km of the existing network; £1,837 within 2km; £2,237 within 3km; and £2,637 within 4km.

<sup>3</sup> The Gas (Connection Charges) Regulations 1986 [SI 1986/1488]

<sup>4</sup> Gas Transporters Licence, Condition s 3, 5 and 6; and new Conditions 4, 4b and 4c

11. The Utilities Act permits DTI to issue social and environmental guidance to OFGEM on the principles to which it should have regard in exercising its functions in relation to its social and environmental obligations. In its draft guidance, DTI has stated that “access to the gas network carries with it benefits in terms of consumer choice and alleviation of fuel poverty. The Government asks the Authority, bearing these considerations in mind, to seek to exercise its functions in ways likely to assist the development of economically viable proposals for extending the network”. However, where the Government wishes to implement measures that would have significant financial implications for customers or regulated companies (such as a large scale extension programme), it must do so by specific legal provision, rather than guidance. The Secretary of State’s power in the Utilities Act to require adjustment of charges by gas shippers, transporters and suppliers to assist disadvantaged consumers only applies to existing customers, and could not be used as the basis for an extension programme.

### **III. THE RELATIONSHIP BETWEEN COMMUNITIES OUTSIDE THE NETWORK AND FUEL POVERTY**

#### **Communities outside the gas network**

12. There are over 4000 communities of more than 150 dwellings without access to the network, of which over 1300 are of more than 300 dwellings, and over 100 of more than 750 (Table 2)<sup>5</sup>. There are some urban pockets without gas (in some cases for safety reasons, in others because local authorities constructed developments without mains gas connections), but these communities are overwhelmingly rural. Almost 1300 are within 2km of an existing gas main, over 2200 between 2 and 7km of a main; and over 500 more than 7km from a main (Table 2).<sup>6</sup> As a rule of thumb, the average cost of providing a connection is £100 per metre + £400 per household.

**Table 2: Proximity to gas main**<sup>7</sup>

LDZ	Settlements >150 dwellings	Within 2km	2-7 km	7 km +
South-West	799	264	439	96
East Anglia	729	238	440	51
South	568	246	293	29
Wales	396	84	237	75
W Midlands	301	77	190	34
Scotland	281	35	101	145
E Midlands	248	62	163	23
North	237	49	126	62
South-East	191	108	83	0
Yorkshire	134	43	88	3
North-West	94	44	48	2

<sup>5</sup> These figures are based upon requests to Transco for connections. They will, therefore, understate the potential market for extension of the network.

<sup>6</sup> These distances do not take account of engineering factors (eg whether the main has adequate capacity to support the extension) or geographical or geological considerations (eg the terrain).

<sup>7</sup> Source: Transco

N London	39	29	10	0
<b>Total</b>	<b>4017</b>	<b>1279</b>	<b>2218</b>	<b>520</b>

### The fuel poor outside the network

13. In 1998, around 3.3 million were English households in fuel poverty (Table 3), of which 900,000 lacked a gas supply (although some could have access to mains gas). On this basis, there may be more than 50,000 fuel poor households in Wales without access, whilst, in 1996, about 320,000 fuel poor households in Scotland did not have a gas supply. That suggests that, in Britain, some 1.3 million of the 4.5 million fuel poor households may lack access to gas. As there are 4.5 million households in Britain without access to gas, the fuel poor may constitute 25-30% of those without gas, cf a 1998 estimate that (for England only), about 16% of households were fuel poor. The incidence of fuel poverty amongst those without gas therefore appears significantly higher than amongst those with access to gas.<sup>8</sup>

**Table 3: Incidence of fuel poverty in England<sup>9</sup>**

GO Region	% in fuel poverty in region	% of total fuel poor in England
North East	31.0	7.8
Yorkshire/Humberside	29.1	13.4
West Midlands	26.9	13.0
North West	24.5	16.5
East Midlands	22.7	10.6
South West	22.5	8.6
London	17.1	10.9
Eastern	16.8	8.4
South East	14.8	10.8
<b>England</b>	<b>21.8</b>	<b>100.0</b>

14. There are no precise figures to show how the 1.3m fuel poor households without mains gas are heated. BRE data show that, in 1996, 63% of rural households, including those in rural towns, used mains gas or LPG, cf 83% of all households. The remainder was split between fuel oil (12%), solid fuel (9%), standard rate electricity (2%), off-peak electricity (8%) and other fuels (6%). The use of mains gas and LPG declined with increased isolation: 55% of village centre households used mains gas or LPG, but only 31% of isolated rural households did so.

## IV. THE COSTS AND BENEFITS OF EXTENDING THE NETWORK

15. Transco has estimated that it would cost £80 million to connect 100 communities to the network, assuming connection of all pensioner and deprived households and payment of a contribution by other households. This would entail costs of £400,000 per

<sup>8</sup> Source: BRE EHCS 1996/SHCS 1996

<sup>9</sup> Source: BRE EHCS 1996, (HB and ISMI included as income)

community; additional service costs of £20,400 to connect designated households; and a contribution of £20,000 from non-designated households. Transco estimated that it would cost £1-2 per annum per consumer to fund such a programme through a levy on gas consumers, not taking account of potential contributions from transporters, suppliers and others.

16. Transco has calculated the additional annual indicative benefits of such a programme as: connecting 16,000 households to gas and removing 12,000 from fuel poverty; reducing emissions (CO<sub>2</sub> by 46,000 tonnes; CO emissions by 376 tonnes; acidic emissions by 1,000 tonnes; PM<sub>10</sub> by 100 tonnes); reducing environmental (£4.7m), energy (£2.5m); health (£1.4m) and building maintenance costs; and providing environmental and economic benefits to local industry.

17. In addition, Transco carried out detailed research in four communities<sup>10</sup>: Aldbrough (East Yorkshire), Four Lanes (Cornwall), Gellifor (Wales) and Abernethy (Scotland). It assessed the costs and benefits of extension based upon assumptions of 40% and 60% take-up of connection and the installation of gas central heating. This assessment gave a net benefit that, in three cases, far outweighed the costs of connection at both assumed up-take levels. The study also evaluated settlements in terms of net benefits per household, which varied according to location. The Transco research highlights the overall benefits of connection, especially where present use of central heating is relatively low, but those benefits are substantially in respect of environmental emissions. By contrast, the pressure for connection from individual communities tends to be based upon the perceived price advantages and, to a lesser extent, the convenience of mains gas. The results of the Transco research are set out in detail at Annex 4.

### **Cost/benefit analysis of extension for group**

18. In the light of the foregoing and other information, DTI carried out a cost/benefit analysis for the group to help determine whether extending the network would be effective in delivering benefits to the fuel poor and the wider community. The analysis was also designed to highlight other possible avenues of action that might be more effective in alleviating fuel poverty, given the high average cost - £3,000-5,000 per household - of installing gas infrastructure and heating systems, and to indicate whether there were arguments for extending the network for different policy purposes, that should be taken forward in other fora. The analysis was intended to be followed by more detailed work, and as a benchmark for a potential programme. The analysis is at Annex 5.

19. Its key conclusions were:

- it does not seem to be value for money to engage in a universal programme to extend the gas network, although, as communities are infinitely varied, some, possibly many, projects will be value for money.

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<sup>10</sup> National Energy Action & AEA Technology: “The Environmental and Social Benefits of Gas Connection: the Net Economic Benefits of Four Case Studies”; Study for Lattice Group plc, April 2001

- market failure may be contributing to slow expansion of the network. A part funded project (to the extent that the fuel poor are subsidised) may help to overcome the co-ordination problem.
- extending the gas network to settlements is one approach but it may be as cost effective to look at connecting individual or small clusters of fuel poor close or adjacent to a gas network. It will be necessary to look at projects to connect settlements on an individual basis in more detail to assess viability.
- fuel cost savings are significant, and we have applied a monetary value to CO<sub>2</sub> emissions, but the valuation of other environmental and health benefits is too uncertain to apply a monetary value to them
- expanding the gas network is helpful to the fuel poor as the (internal and external) benefits outweigh the costs but the participation of the non fuel poor may be critical. On an average individual basis, it does not seem cost effective for the non-fuel poor to fund connection, a gas central system and insulation against the fuel savings that they might expect to make. There will be exceptions.
- the analysis is sensitive to the rate of return. The analysis uses the 6% real discount rate currently used in respect of public expenditure. However, HM Treasury is currently consulting on the appropriateness of using a lower rate. The sensitivity analysis therefore uses a rate of 3.5%, which shows a positive net present value for extension, although that might be overstated depending on the level of Government funding towards a programme.

## **V. COMPARING GAS WITH OTHER FUELS**

20. There is a range of other fuels that could be used in non-gas areas. The installation and running costs attached to such fuels are discussed at paragraphs 26-30. This section draws out some relevant information.

### **Established fuels: electricity, fuel oil, solid fuel, LPG and LNG**

21. The Scottish Central Heating Programme offers insulation in tandem with electric storage heating, fuel oil central heating and solid fuel central heating, all of which it can provide within its maximum allocation of £2,500 per household (it has excluded individual LPG on cost grounds). The capital and maintenance costs of electric storage heating tend to be lower than those of central heating systems. The CO<sub>2</sub> emissions associated with electric heating depend on the mix of fuels used for generation. On the current average fuel mix, CO<sub>2</sub> emissions in a typical electrically heated home are higher than those for mains gas or LPG, similar to those for fuel oil and lower than those for solid fuel. However, if heat pumps were used, electricity's CO<sub>2</sub> emissions would be lower than for other fuels (heat pumps would add to capital costs, although their costs would be likely to reduce if used more widely in the domestic market). Fuel oil, solid fuel and individual LPG all require storage space, which may make them inappropriate for certain properties. Fuel oil requires a storage tank (cost £200-400) from which it is piped into the property. It must also be purchased in bulk, and staged payments would be

required for the fuel poor to meet this cost - c£300-400 to fill a normal domestic tank of 1,000-2,000 litres. Fuel oil distributors offer such schemes, and all but one distributor in Wales have offered to operate a pre-payment scheme through post offices as part of the NAW HEES research. Fuel oil can be used to supply a communal heating system. Solid fuel can be used both to heat room radiators from a room-heater or to fuel a gravity-fed central heating boiler, but may be inconvenient, particularly for elderly people. It would also be likely to require safety measures, including smoke detectors, to be taken.

22. Calor Gas<sup>11</sup> has suggested that it could provide a communal Liquid Petroleum Gas (LPG) tank serving fifty homes, which could be targeted to pockets of fuel poor households, for £60,000 - c£1200 per household, whilst the capital cost of installing LPG-fuelled central heating would be c£2000 per household. Liquid Natural Gas (LNG) systems carry similar costs. In environmental terms, LPG is the least polluting conventional fuel available to non-gas homes. LNG would not be economic for small sites due to the high costs of storage vessels (£500,000), transport and the product itself. Calor Gas argues that the provision of communal heating would limit the impact of price movements, as a single delivery and operating point would reduce transport and technical overheads. It adds that Government support would diminish the level at which capital costs would have to be recovered through consumer pricing.

#### Combined Heat and Power (CHP)

23. The Government has announced that it is actively working towards a target of at least 10,000 MW of installed CHP capacity by 2010. CHP (the simultaneous generation of usable heat and power (usually electricity) in a single process) has two potential applications to domestic households in non-gas communities: as a means of providing community, industrial and commercial and individual household heating. The most valuable application appears to be as community heating, which can offer households heating at a lower cost than individual central heating, as well as significant savings to non-domestic premises, such as schools. The use of CHP in community heating schemes not only optimises their energy efficiency, but also offers users the chance to reduce electricity costs. Typically the low-cost heat and electricity offered by such schemes can result in cuts of 40% in energy costs for a household on a low income (an average of £2.60 per week). It has been estimated that upgrading existing community heating schemes and carrying out associated improvements would offer potential carbon savings of 0.9 MtC per year by 2010<sup>12</sup>. DEFRA recently announced a £50 million Community Energy Programme (£20 million in 2002-03; £30 million in 2003-04) aimed at stimulating private investment in CHP and community heating, and helping 100,000 people on low incomes to heat their homes. Providing a gas connection to a community CHP scheme would have the scope to maximise environmental and cost benefits.

24. At least three companies are working towards launching domestic micro CHP units. The economic viability of micro CHP for an individual dwelling depends on the total heat demand of the property (a combination of size and energy efficiency), the cost of

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<sup>11</sup> "The UK Fuel Poverty Strategy: a Submission by Calor Gas Ltd", May 2001

<sup>12</sup> The Climate Change Programme

electricity and the sell-back price of surplus electricity. The market for units would be likely to be based on those households needing to replace conventional boilers, although it is unlikely that the unit price will ever fall to the level of a conventional gas boiler due to the additional components required. Prices would also depend on volumes of sales and as the market developed, they would be likely to fall. Whilst costs are not yet set, it is thought that units would cost at least £400 more than a conventional boiler, and installation costs are also likely to be higher than for existing systems. Initial, informal analysis indicates that households could reduce their annual fuel bills by an average of £100 by installing micro CHP and if half of UK households had installed micro CHP by 2020 overall UK carbon emissions could be reduced by 3.7 million tonnes per year. As part of the Fuel Poverty Strategy, the Government announced a £10 million micro-scale CHP pilot involving up to 6,000 English and Welsh households.

### Renewables and other “new approaches”

25. A number of less traditional energy sources and technologies also provide scope for providing heat to non-gas households. In publishing its Fuel Poverty Strategy, the Government announced a £5 million pilot project to establish what role renewable energy could play in reducing fuel poverty. A range of renewable energy and other technologies will be assessed in terms of the contribution they can make to delivering affordable warmth to non-gas households. Among the technologies are ground source heat pumps, which might be suitable for single households, where it might reduce electricity bills by 25-30%, solar water heating, which might be suitable for single households as an alternative to peak electric water heating, biofuel heating, which might be suitable for single or groups of buildings, and could provide costs between those for mains gas and oil, and wind or hydro electricity generation, which might be suitable at a community level.

### **Comparing mains gas with other fuels**

26. Research by the Building Research Establishment (BRE) suggests that:

- using a base figure of 900,000 for English fuel poor households without gas, the provision of gas central heating and full insulation measures would take 600-700,000 (70-80%) out of fuel poverty cf. 300-400,000 (30-45%) by the provision of electric storage heating and full insulation measures and 200-300,000 by insulation measures alone. (c60% of the fuel poor without gas have homes with cavity walls)
- almost all of the fuel poor without gas are in the most vulnerable categories (over sixty or with children)
- even those households that would not be removed from fuel poverty would be materially assisted, both in financial and health terms, by the provision of effective insulation and heating

27. BRE did not measure the impacts of providing other central heating systems. However, research by NES (Table 4) presents some scenarios, for different fuels, for a solid-walled property. This suggests that, for such a property:

- the key measures to reduce required fuel expenditure are central heating and external wall insulation
- comparing the running costs of gas, electric and oil central heating, gas is the cheapest with oil a close second.
- this is also the case in terms of CO<sub>2</sub> emissions: it is estimated that a saving of 2.4 tonnes of CO<sub>2</sub> emissions per household each year could be achieved compared to providing an electric system.

insulation and gas central heating could reduce annual fuel costs from £1286 to £408 (£878 pa), cf. £474 for oil central heating and £646 for off-peak electric storage heating. On average, the fuel poor might benefit by c£400 pa from access to mains gas, but, on the basis of current prices, not significantly less by having access to heating systems driven by oil or solid fuel. 28. The research therefore suggests that:

- whilst a gas central heating system would be the favoured option because its capital costs are lower, and it produces fewer emissions, both oil and solid fuel represent alternatives to electricity
- the capital costs of oil heating equipment are higher than for gas (£2,000 in NES's evaluation, although information from manufacturers suggests that the difference is £500-1,000 per household), but solid fuel equipment is similar in cost to gas (NES did not provide data on solid fuel, but information from the SFA and manufacturers suggests that a solid fuel gravity feed boiler and heating system could be supplied and fitted for £2,000-2,500, and a system fired by a solid fuel room heater, for £1,500-2,000)
- oil's current running costs for this kind of property are around £100 pa lower, suggesting that it would take about 25 years to recoup the difference in costs. This would be significant if households were meeting both capital and running costs, less so for fuel poor households receiving assistance in covering capital costs. Their main interest will be in the running costs and therefore oil would be favoured over electricity on the basis of recent price history.
- for all households, the typical annual fuel costs for a household with gas central heating were £671, cf, £933 for electric storage heating. That suggests that the non-fuel poor without access to gas would save c£260 pa if they switched to gas central heating. However, assuming installation and equipment costs of c£4000, that balance is unlikely to be attractive to householders.

**Table 4: Improvements made to a difficult property and their costs and effects**

**Costs of improvements**

	Gas	Off peak electric	Oil fired central heating	LPG
Stage 1- insulation	£320	£320	£320	£320
Stage 2- heating equipment	£2,000 (£2,320)	£1,500 (£1,820)	£4,000 (£4,320)	£4,000 (£4,320)

Stage3- close open chimneys	n/a	n/a	n/a	
Stage 4 Double glazing	£5,000 -£7,000 (over £7,320 - £9,320)	£5,000-£7,000 (over £6,820- £8,820)	£5,000 -£7,000 (over £9,320- £11,320)	
Stage 5 External wall insulation	£3,500 - £7,000 (over £10,820- £16,320)	£3,500-£7,000 ( over £10,320- £15,820)	£3,500-£7,000 (over £12,820-£18,320)	

Note: **figures in brackets represent the cumulative cost of the improvements.**

### Effects of improvements- SAP ratings, fuel expenditure, CO2 emissions

	Gas	Off peak electric	Oil fired central heating	LPG
Stage 1- insulation	SAP 1 £1,085 18.3 tonnes CO2	SAP1 £1,085 18.3 tonnes CO2	SAP 1 £1,085 18.3 tonnes CO2	SAP 1 £1,085 18.3 tonnes CO2
Stage 2- heating equipment	SAP 55 £408 5.9 tonnes CO2	SAP 25 £646 12.8 tonnes CO2	SAP 61 £474 7.7 tonnes CO2	SAP 30 £686 7.1 tonnes CO2
Stage3- close open chimneys	SAP 58 £397 5.6 tonnes CO2	SAP 27 £621 12.1 tonnes CO2	SAP 64 £458 7.3 tonnes CO2	
Stage 4 Double glazing	SAP 59 £385 5.4 tonnes CO2	SAP ? [stage order reversed, so impossible to say]	SAP 66 £443 7.1 tonnes CO2	
Stage 5 External wall insulation	SAP 81 £314 3.8 tonnes CO2	SAP 53 £446 7.4 tonnes CO2	SAP 91 £342 4.8 tonnes CO2	

Note: **the starting point prior to improvements involves a property with SAP 1, costing £1,286 pa for fuel.**

### Running costs of other fuels and future price movements

29. The average running costs of fuels vary from year to year and area to area. In October 2000, the average running costs of space and water heating for a three-bedroom house were:<sup>13</sup>

	Condensing boiler	Conventional boiler
LPG	£794-926	£954-1,116
Oil	£563-669	£681-811
Electricity	£533-744 <sup>14</sup>	£1,042-1,258 <sup>15</sup>
Solid fuel	£486-595 <sup>16</sup>	£520-629 <sup>17</sup>
Gas	£300-346	£356-413

<sup>13</sup> Source: Sutherland Associates, October 2000. Relative positions will change with price fluctuations, eg, in October 1998, oil cost £300, gas, £400..

<sup>14</sup> Economy 7 and storage heating

<sup>15</sup> Standard electricity and storage heating

<sup>16</sup> Gravity-feed boiler

<sup>17</sup> Solid fuel room-heater

30. Between 1996 and 2000, the relationship between running costs for gas, solid fuel, electricity and LPG was broadly similar, although, between 1996 and 1999, the running costs of fuel oil were below those of gas. The running costs of LPG are more than twice those for mains gas, and substantially higher than those of other fuels. Aside from electricity, none of the alternative fuels to gas is price-controlled (although the remaining price controls for gas and electricity are limited), nor is the consumer interest represented by any specific statutory body. It is difficult to give meaningful forecasts of future price movements of established domestic fuels, all of which are subject to price movements beyond national control. As a crude oil derivative, LPG is subject to general and seasonal changes in the oil price, as is fuel oil, the price of which has increased significantly since 1998. Mains gas prices, after a period of decline, are now moving upwards. In terms of sourcing, solid fuel offers the most diverse, secure, long-term supply, but there is evidence that UK house coal prices are now rising, chiefly in response to increased demand for power station coal and upward price movements for other fuels. Electricity prices have been stable.

## **VI. RESULTS OF THE COMPARISON OF THE COST AND BENEFITS OF GAS AND OTHER FUELS**

31. Whilst more data is required, the analysis and other available information point to certain conclusions. As a general point, they suggest that domestic use of mains gas can promote better health, increase the efficiency of energy provision within the home, directly and indirectly reduce greenhouse gas and other emissions, and be more convenient to use than other heating methods. In addition, mains gas gives access to a broader range of energy efficiency schemes than other fuels. In terms of running costs, it can reduce the cost of efficiently and effectively heating a home. However, based on their recent price history, fuel oil and solid fuel also appear to offer significant reductions in fuel costs, albeit with lower health and environmental benefits, although there may be communities and households for which they would be inconvenient or inappropriate. Electric storage heating can also reduce costs, but to a lesser degree, as can, to a smaller extent, insulation measures alone. In terms of connection costs, fuel oil and solid fuel carry a limited cost - that of providing storage for the fuel - compared with gas, where the cost of connection will be, on average, £1,000-£3,000 per household. At c£1200 per household, the cost of providing community LPG could also be lower in certain circumstances. In terms of capital costs, there appears to be some difference, but not necessarily a significant one, between installing a gas central heating system and one powered by other fuels. The installation of electric storage heating would be cheaper, although less effective as a heating source. **Where households can be removed from fuel poverty by limited measures, such as the installation of insulation alone or of insulation and space heating, there is a strong argument for offering only such measures, and reserving funds for more deprived households.**

32. Connection to mains gas will, therefore, be the appropriate tool to deal with fuel poverty in some non-gas households. Although in terms of overall cost it may be a more expensive option, it will often, in terms of cost to Government, be cheaper because of the scope for accessing complementary schemes and leveraging in industry contributions. It

will also be attractive to the fuel poor because it promises the lowest running costs. However, in terms of impact on individual fuel poor households, it would be the slowest to take effect because of the work involved in establishing connections. **It is likely that extension will be appropriate in those communities where a number of factors - particularly size, density of property, relative ease of connection and the presence of other parties ready to defray costs - coincides. This suggests that, rather than embark upon a programme predicated upon extending the gas network, the Government should focus on the core question of assisting the fuel poor in non-gas communities, by a broader approach.** This would ensure that the most appropriate mechanism could be chosen for each community on a case-by-case basis, and that households would also have an element of choice (although the running cost implications of individual fuels would have to be made clear). It would also provide an objective means of testing the arguments of individual communities and councils that have argued for extension.

33. If the environmental benefits and the benefits of consumer choice are given greater weighting, the position changes, particularly in terms of gas vis-à-vis fuel oil and solid fuel, although to a much smaller degree with LPG. Clearly, any active encouragement of fuels more polluting than gas would run counter to wider environmental objectives. It follows that, if the issue is approached from a viewpoint wider than that of the Fuel Poverty Strategy, a larger scale programme to extend the network grows more attractive.

## **VII. FUNDING APPROACHES**

34. There is a number of ways in which a programme to address rural fuel poverty could be financed and encouraged, and any programme would be likely to draw on a combination of them, depending on the circumstances of the individual community. The approaches we have considered are, in particular: funding through general taxation; financing through a levy on gas consumers; accessing existing energy efficiency programmes; tapping regional and other non-energy funds; and seeking contributions from gas transporters and suppliers, local authorities, local industry and householders. As explained at paras 9 and 10, use of the price control would not be an appropriate or straightforward means of organising extension of the network.

### **Central funding through general taxation or a levy on gas consumers**

35. General taxation would be a simple means of funding, but, in the case of a very extensive programme, would require DTI and DEFRA to negotiate as much as £200 million from the Treasury. In present circumstances, it may be unlikely that such funds could be negotiated. However, the group's analysis suggests that any programme may be far less extensive. In these circumstances, a smaller programme might not only fund initial or pilot projects, but might cover a significant number of the communities where extension was deemed feasible, as well as funding measures for some of those where it was not.

36. If some central funding were available, but a good deal of further work were required, or if it were unavailable, but investigation in communities revealed compelling arguments for large-scale extension programme, one approach to financing would be a levy on existing gas consumers. Such an approach would entail gas consumers helping to provide others with benefits they already possessed. General taxation, could also be used to fund extension, on the basis of promoting social inclusion, although that would entail all taxpayers, including those without mains electricity, financing potential gas consumers. As an indication of the level of any levy, the estimated cost of an annual £80 million programme would be £1-2 per customer, depending on whether all or solely domestic consumers were charged and how industrial and commercial consumers were charged. However, the existing Energy Efficiency Commitment (EEC) cannot be used in this way, and neither the text in the Utilities Act governing energy efficiency nor anything in previous gas legislation, provides the basis for imposing such a levy. A levy would, therefore, require amendment of primary legislation.

### **Funding through other central or local Government funds**

37. The chief source of non-energy funding is regional funding under the EU Structural Funds, which are described in more detail at Annex 6. It is highly unlikely that the Funds could be used simply to fund extension of the network to domestic property. It might, however, be possible for projects that entailed connection of commercial and industrial premises to access the Funds, and involving local authorities in a programme would maximise the scope for access.

### **Support from transporters, suppliers, manufacturers**

38. **There is scope for reducing costs of gas connections to a programme or to individuals by securing support from Transco and IGTs, suppliers, equipment manufacturers and installers and other industries.** In respect of transporters, one approach would be for infrastructure to be laid, and the new network connection auctioned to transporters. On this basis, transporters might contribute between 25-50% of project costs. They would, however, recover this from customers, and a judgment would have to be taken in terms of balancing the defraying of scheme costs and funding of further projects against the level of future gas bills (transportation charges, together with metering, account for some 40% of a domestic bill) and the scope for encouraging connections to the non-fuel poor. There would be additional benefits to Transco if a programme could be dovetailed with its pipe replacement programme.

39. Equipment manufacturers should be prepared to offer discounts for bulk purchases, which would benefit the programme as a whole and defray the costs of households not receiving assistance. Installers should also be able to offer reductions on their standard unit price. Suppliers might be persuaded to pay a rent to be the preferred supplier to a community. Typically, suppliers pay a rent of £20 per property to be the preferred supplier on a new development, which compares favourably with the cost of acquiring customers by standard marketing methods such as direct sales. Preferred suppliers should also be encouraged to advise consumers of their most appropriate tariff and

payment method, eg Basic Bank Account, StayWarm etc, rather than more expensive payment options such as prepayment meters. It is possible that contributions would be made by non-energy industries in cases where connection work could be utilised by other utilities.

40. In respect of other fuels, there would also be scope for seeking contributions from the industry. In its submission to the Fuel Poverty Strategy, Calor indicated a willingness to undertake community LPG projects “on a shared cost basis with the Government”. In circumstances where fuel oil or coal central heating systems or electric storage heating were to be installed, it might well be possible to secure contributions from manufacturers in the form of price reductions. The Scottish Executive’s Central Heating programme has already secured bulk discounts from manufacturers.

### **Support from householders**

41. If connections to communities were subsidised, it should be possible for transporters to offer reduced price connections to non-fuel poor households, which could also benefit from other reductions on equipment etc secured by a programme. Contributions from such householders would, in turn, defray the overall cost of the programme.

## **VIII. POTENTIAL INTERACTIONS WITH SCHEMES PROVIDING ENERGY EFFICIENCY SUPPORT**

42. A number of programmes could interact with a programme to assist communities outside the network, whether by the provision of mains gas, or through other measures. Some programmes are common to England, Wales and Scotland; others are limited to one area of Britain. Some can be accessed in conjunction with a range of fuels; others cannot. The range of programmes is identified in the draft Fuel Poverty Strategy.

43. The EEC is an obligation on licensed gas and electricity suppliers to encourage or assist domestic consumers, particularly the disadvantaged, to take up energy efficiency measures. Under the Utilities Act, the Government will set the EEC obligation for electricity and gas suppliers from 2002-2005. This will form the basis of the targets for promotion of energy efficiency from domestic consumers that suppliers must deliver through their EEC programmes. Suppliers will decide how they meet their targets cost-effectively: there will not be a specified amount of money that a company must spend in doing so. EEC funding can be used to meet basic insulation costs for fuel poor households irrespective of the fuel source used to heat the property. Where mains gas was being provided, there would be scope for accessing the Affordable Warmth Programme, developed by Transco in collaboration with the Government, which encourages the installation of insulation and gas central heating. This would be particularly relevant where consortia including local authorities were bidding for funding.

44. In England and Wales, the other key programme is the Home Energy Efficiency Scheme (HEES), marketed as the Warm Front Team. A radically improved HEES was launched in June 2000, with an allocation of £600 million to 2004. It is designed to

tackle fuel poverty among those most vulnerable to cold-related ill-health. It focuses on owner-occupied and private rented accommodation, and provides grants for comprehensive packages of insulation and heating improvements, including central heating systems. The HEES offers grants of up to £1,000 to low income families with children and the disabled, and up to £2,000 to low income householders aged 60 years or more. In England, both levels of grant can be used to fund heating measures inside the home. Access to the scheme is through receipt of a qualifying income or disability-related benefit, and some, but not all, other low-income households may qualify for the lower grant. The English scheme is reliant on the household taking a gas or electricity supply for heating purposes. The Welsh scheme has a similar focus, including a limit at the lower level to fixed heaters and insulation measures. However, in light of the number of households without access to mains gas, the National Assembly for Wales is about to conduct a research programme into admitting other forms of heating to the scheme. This research may lead to a pilot programme.

45. As the English HEES maxima would not permit the financing of gas central heating and insulation measures in all fuel poor households, even where insulation could be financed from other sources, if an extension programme were put in place, some additional resources would have to be found within it to assist households unable to benefit from the HEES. This would need to be taken into account when decisions on the costs and benefits in individual communities were reached. To draw on funding from the programme to make up the HEES shortfall would also reduce the overall funding available for other measures. In the longer term, it may be that the HEES maxima should be increased along the lines of the Welsh HEES, which has maxima of £1,500 for low income families with children and £2,700 for low income householders aged 60 years or more, the disabled and low-income single parents; and the range of target households broadened. This would be likely to require a review of the overall funding of the scheme.

46. The Warm Zones scheme, which currently operates in five English areas - Stockton, Sandwell, Newham, Hull and Northumberland - increases take-up of energy efficiency measures by intensive action in a specified geographical area. Warm Zones Ltd (WZL), working in partnership with local authorities, visits householders on a street-by-street basis and establishes who is fuel poor and might benefit from existing programmes. DTI and DEFRA support the scheme, and provided WZL with a budget of £1 million to establish the pilots. WZL does not assess the most appropriate form of heating in any community, and, because of the limitations on the programmes to which it can signpost householders, cannot direct them to the range of heating methods, although it has been in discussion with Calor about community LPG schemes in Northumberland. It might, however, be possible to draw on WZL's expertise, whilst its findings will be valuable to any new programme.

47. The Scottish Executive's key programme for tackling fuel poverty is Central Heating for Pensioners and Other Vulnerable Households, which accesses all available energy efficiency programmes, including the EEC, Affordable Warmth and Warm Deal (see below). From April 2001, a five-year programme will install a central heating and insulation package in 100,000 local authority and housing association properties, and

40,000 pensioner homes in the private sector. The programme will receive funding of £26 million in 2001/2, £30 million in 2003/3 and £40 million in 2003/4. The package is worth up to £2500 per household for the installation of loft, pipe and tank insulation, cavity wall insulation and a central heating system, and is delivered in collaboration with public sector landlords, power companies and Transco, with a managing agent, EAGA, delivering the private sector programme. Because of the numbers of Scottish households outside the gas network (some 25%), the programme is open to fuel oil and solid fuel systems. We understand that it is possible to provide a central heating system within the budget, although LPG is excluded on cost grounds. It is, however, too early to draw any conclusions from the programme. The Scottish Executive also oversees the Warm Deal, which was introduced in July 1999 and is a partial equivalent to the HEES, but with narrower coverage and lower grant maxima. It provides households dependent on benefit with a package of insulation measures up to the value of £500, and should benefit c100,000 households by March 2003.

48. Local authorities have a role, both as landlords and under the Home Energy Conservation Act 1995, in improving the energy efficiency of all housing in their areas. They have their own programmes of work with others, including energy suppliers, to deliver energy efficiency measures.

## **IX. PRIORITISING COMMUNITIES AND DELIVERING A PROGRAMME**

### **Prioritising communities**

49. Whether or not extension of the network takes place, any programme to address fuel poverty in predominantly rural communities will require prioritisation. DTI and Transco have developed an initial list of priority communities (Annex 7), based on Transco data on non-gas communities and DEFRA deprivation indices. This list is imperfect and will need to be refined by more detailed research into the communities listed and by a scoring system under which communities may be objectively prioritised, taking account of numbers of fuel poor, size of community, geography and geology and any relevant technical issues. This may well provide a basic guide to communities where gas extension is clearly the best method of addressing fuel poverty; and others where it is plainly not feasible. The better the prioritisation, the greater the proofing against lobbying and special pleading by local authorities, pressure groups, MPs and others.

50. The list provides some valuable information, not least that the most deprived wards are in non-gas areas, and that many of these are in urban communities, including Merseyside (ten of the top twenty), Teesside (five of the top twenty) and Manchester. The largest populations without gas are in Manchester/Central (2526), Liverpool/Everton (1283), Oldham/Coldhurst (1120), Newcastle/West City (1116), Rochdale/Central & Falinge (1079). This suggests that there may be scope for quick wins in providing connections, especially given the possibility for further economies of scale where wards are contiguous. It also increases the prospects both of development of gas-fired community CHP schemes and linkage with the Affordable Warmth scheme and other local authority-based initiatives. However, it also raises the question of whether a model

combining Transco data and Deprivation Indices can adequately reflect fuel poverty in rural non-gas areas. In refining the list, account will have to be taken of the peculiar circumstances of such communities, and use made of other sources of information.

### **Delivering a programme**

51. The appropriate delivery method depends on the extent of a programme of gas network extension. The group has considered the two most likely ways of delivering a reasonably substantial programme: a highly centralised programme that would work through the priority list, overseeing individual projects; or a challenge process in which local partnerships would be invited to bid for funding for projects, so long as the communities involved were near the head of the priority list. The group prefers the latter approach. Whilst it would lose some of the logic of working through the most appropriate communities in order, it would place the onus on those best placed to know the needs of local communities to construct projects against set criteria (against which proposals would in turn be assessed). It would also maximise the scope for developing projects that offered wider economic benefits and accessed a wider range of funds. If a pilot programme were put in place, the first projects would have to be high on the priority list. Whichever approach were used, it would be likely to be desirable, initially, to have an appropriate geographical spread.

52. A programme could most effectively be delivered by a dedicated managing organisation, reporting to a steering group drawn from members of the working group, which would establish clear criteria for assessing potential projects in the light of the findings of this report and the views of Ministers. The managing organisation would have to be able to consider and deliver mixed options, including traditional fuels, community and micro-CHP and renewables. Its first task would be to refine the priority list of communities. It would then develop and oversee the initial pilot projects in the communities at the head of the list. This would require it to carry out initial work with local authorities (to acquire information and lever in funding) and individual households to establish demand and need. The initial pilots should also involve communities where other fuels were likely to be more appropriate than gas.

53. In both initial pilot projects and subsequent projects, the managing organisation would manage programmes and undertake post-investment appraisal. It would co-ordinate all aspects of the work, including assessing bids and overseeing construction, planning approvals, selling networks, negotiating with suppliers and manufacturers, engaging local authorities both on their own housing and energy efficiency funds and accessing other funds.

54. If a new programme involving funding of the gas transportation industry were undertaken, any funding would have to be notified to, and approved by, the European Commission, and could not be provided until approval had been secured. The approval process would take at least three months.

## **X. CONCLUSIONS AND RECOMMENDATIONS**

55. There is strong evidence that a programme targeted at the fuel poor in non-gas areas could significantly contribute towards attaining the objectives of the Fuel Poverty Strategy. The information available to the group suggests that providing gas central heating and insulation measures to the 900,000 English fuel poor households outside the gas network could remove 600-700,000 of them from fuel poverty, including the great majority of the most vulnerable groups (people over sixty and families with children). It is likely that similar or proportionately larger impacts would be made in respect of Wales and Scotland. It would also promote better health, increase efficient energy provision, reduce greenhouse gas and other emissions and be convenient for most households to use. Other, non-energy based measures would be required to remove the remaining households from fuel poverty, but a significant improvement in their condition would be likely to stem from measures of the kind recommended. A programme would also have the scope to provide economic benefits to communities, both in terms of job creation and by increasing the scope for industrial and commercial development arising from access to cheaper, more efficient fuels.

56. However, for many communities and households, access to the gas network will not be economically feasible. Whilst other fuels, particularly traditional fuels, cannot provide the same range of benefits as gas, the information available to the group suggests that similar results in respect of removing households from fuel poverty could be achieved by using other fuels in conjunction with the provision of central heating and insulation. These fuels do not, in the main, require the development of costly infrastructure, and will have a quicker effect. In many cases, they may, therefore, provide better value-for-money than financing a gas connection. There will also be cases where it is possible for households to be removed from fuel poverty by more basic and cheaper measures, such as the installation of electric storage heating and insulation measures, or insulation measures alone. However, in cases where fuels other than mains gas are broadly comparable in terms of cost of installation and running costs, and where the householder does not have a particular preference, the most environmentally friendly solution should be adopted.

57. The group therefore concludes that the Government should focus on the objective (removing households in non-gas areas from fuel poverty) and not the means (extension of the gas network). This will entail a case-by-case approach geared to meeting the needs of individual communities and individual households within those communities. In some cases, connection to the network will be the most appropriate means of achieving the objective, especially in larger communities with high housing density that are relatively close to the existing network. In others, other fuels or measures will be the most appropriate. In this context, the group notes that, at present, the means available to the Government in England and Wales are substantially limited to mains gas or electricity. It therefore recommends that, if the limits on the HEES budget mean that it cannot be extended to other fuels, the Government should put in place parallel arrangements to finance the installation of fuel oil or solid fuel systems, drawing upon funding for a programme for non-gas areas. That would bring England and Wales into line with Scotland. Given the cost of financing insulation and the installation of gas central

heating, Ministers should also consider increasing the HEES maxima for qualifying households, as well as extending the range of low-income households that can qualify for assistance under the HEES.

58. A combination of this measure and funding of some extension of the gas network would represent a coherent programme that would make a material difference to fuel poor households. By linking with other programmes and leveraging in private and public sector contributions, a programme of, for example, £50 million carried out over three years or less on the basis we have described could remove significant numbers of households from fuel poverty. The precise numbers are difficult to predict, because much will depend on the individual circumstances of households and communities and the funds levered in from private and public sector sources, but between 60,000 and 100,000 households could be removed from fuel poverty.

59. The initial funding from central Government will have to be substantial enough to encourage support from the range of bodies, in both the private and public sectors, that a programme would have to engage. A £50 million programme would ensure that engagement, and would also mean that a good range of communities in relative proximity to the network, as well as communities for which extension would not be feasible, could be tackled in a cost-effective way.

60. Decisions on what is the most appropriate method of addressing fuel poverty within individual communities should be taken in the light of investigation in the communities themselves. The report includes an initial priority list of the most deprived areas without mains gas. This will need to be extended to Wales and Scotland, and refined to take account of the relative under-representation of rural communities. The refined list should then be the basis for further investigation, both with local authorities and on the ground, to test the list itself, and to develop the right approach for each community.

61. Extension is one of the tools available to assist the rural fuel poor. It is also untried for that purpose. It should, therefore, be piloted in those priority communities where it appears the most attractive option. This will inform decisions on whether a wider programme would be appropriate. If it were, the Government might have to amend primary legislation to permit the imposition of a levy on existing gas customers, if it deemed such an approach preferable to continuing to assist non-gas communities through general taxation.

62. Where extension is appropriate, Government should encourage appropriate sponsorship from gas transporters, suppliers and equipment manufacturers and installers, as well as interaction with other utilities. The best approach to leveraging in contributions from a range of bodies would be for local consortia to bid for funding under the programme.

63. The group recommends that, in the event of a programme being agreed, further work be taken forward by a steering group drawn from the working group and beyond,

overseeing a managing organisation that would deliver all aspects of the programme against clearly defined and transparent criteria.