

Energy Efficiency: The “Most Best” Options

Introduction

This paper consists of 10 parts.

Part 1 is the introduction which argues that following the conversion to CCGT electricity generation, CO₂ reductions in generation will be incremental rather than step changes in the immediate future.

Part 2 argues that energy efficiency should be the focus for efforts to reduce energy bills, reduce CO₂ emissions and improve security of supply.

Part 3 examines the case for moving from a budget constrained energy efficiency outcome to a target driven approach.

Part 4 advocates identifying four categories of policy target each of which will require different policy: new buildings, existing buildings, mobile infrastructure/appliances and human behaviour.

Part 5 places the policy in a temporal and consumption target framework.

Part 6 discusses how the money to finance the programme should be raised.

Part 7 – Energy Service Companies (ESCos).

Part 8 looks at the target areas which ESCos might be expected to tackle.

Part 9 deals with the range of possible new or expanded measures.

Part 10 lists the topics on which views are sought.

PART 1

Electricity generation and CO₂ emissions

Northern Ireland's electricity industry has made commendable progress in reducing emissions from electricity generation. This year saw the commissioning of a second Combined Cycle Gas Turbine (CCGT) and the continued growth of renewables which in 2004/05 contributed 6% of the electricity sold – though not all from indigenous sources. Not recorded in the headline figure is the increasing contribution to total electricity production, which is provided by auto generators in the form of Combined Heat and Power Plants (CHP) and small scale renewables such as Photo Voltaics (PV), wind turbines or small scale hydro.

It is clear that over the next few years - unless Kilroot's declining role is reversed – the CO₂ emissions from generation in Northern Ireland should continue to gradually reduce. But there will be no further step change such as that brought about by the introduction of the CCGTs. Moreover, rising demand for electricity could offset the falling emissions per unit of electricity produced.

The fall in emissions has not been associated with falling prices. There are three reasons for this.

The first is that the renewables component in the clean up was always expected to add to costs – at least until all the externalities associated with fossil fuel generation were internalised into the cost of generation. (This of course would not remove the increased cost but merely re-attribute it).

The second is that fuel prices, and in particular gas prices, have increased three fold over the last five years.

The third is that Government is now making a serious attempt to internalise the external costs hitherto imposed on society by fossil fuel burning. These charges on fossil fuel generation take the form of excise duties on Heavy Fuel Oil (HFO) and

Distillate, Climate Change Levy (CCL) and emission permits under the European Union's Emission Trading Scheme (EUETS). However, should gas prices fall in 2007, once the bottlenecks in the UK's gas supply chains have been tackled, the improvement in generation efficiency will result in lower prices all else being equal.

The position with regard to the production of electricity therefore is that while cost savings to customers may be obtainable in the near future, they are by no means certain. As far as emission reductions are concerned, further gains will be limited to incremental year on year reductions until a major power station is replaced by a renewable generating source. This is not to say that over two decades CO₂ reductions will not be substantial.

PART 2

Energy Efficiency

Energy efficiency in these circumstances represents the best opportunity to both reduce emissions and reduce energy bills significantly in the near to medium term.

In sharp contrast with other energy policy issues within energy efficiency there is no trade off between costs and emissions since the energy which is avoided removes both costs and emissions. Moreover by reducing fuel consumption, security of supply is improved and exposure to price volatility reduced. There could in theory come a point at which the capital cost of avoiding energy consumption exceeded the cost that would have been incurred by consuming electricity. But that is an extreme case and quite remote from experience to date. Energy efficient appliances do represent embodied emissions – the energy used in their manufacture – but not necessarily more than the less efficient appliances which they are displacing.

Energy Efficiency – The Experience to Date

The Authority, with the help of the industry, but in particular through NIE, has been encouraging energy efficiency for many years. Through the Energy Efficiency Levy

(EEL) each year, an increasing amount of money has been collected from customers for these purposes. In the current year the EEL is the equivalent of £7 per customer or £4.8 m in total.

While much has been achieved, and the effort has increased steadily since 1997, the total effort is now much less than that made in Great Britain where the equivalent expenditure on gas and electricity is £15 per customer for a dual fuel customer. The amount that has been saved through the EEL is currently running at the equivalent of 449 GWhs per year. This represents annually 84,614 tonnes of avoided CO₂ and £17.2m of avoided customer expenditure. Looking at the savings made in the Energy Efficiency Commitment in GB from 2002-2005, the per capita saving in CO₂ in NI is running at only 57%¹ of that in GB. The per capita savings in energy in Northern Ireland are also only 72% of those in GB. .

The EEL based effort is by no means the only source of investment in energy efficiency. As the gas industry in Northern Ireland is new, any gas installation tends to be an improvement in efficiency. The Housing Executive as the Home Energy Conservation Agency (HECA) is responsible for programmes in its own stock and more generally, programmes which have brought substantial investments and consequent improvements in the energy efficiency of the housing stock. The Carbon Trust provides help and support to the business community.

However, more could be done if more money were available. But with our high energy costs, the Authority has been reluctant to see electricity prices rise yet again, even though the overall benefits from efficiency exceed by far the costs. Unfortunately the benefits are not all immediate, and while everyone pays and ultimately benefits, in the short term the benefits are enjoyed only by the recipients of the energy efficiency measures.

¹ CO₂ savings are based on the carbon content of the avoided fuel. The falling CO₂ content of electricity in Northern Ireland will mean that energy efficiency expenditure while continuing to save energy and costs, will save less CO₂ in future per £ spent.

PART 3

A change of Focus

Hitherto the approach to energy efficiency has been based on what is commonly called a “bottom up” approach. The effect has been achieved by a multiplicity of small schemes aggregating thousands of individual investment decisions – such as installing a low-energy lightbulb or an A grade fridge/freezer – to achieve an overall effect within a pre-set budgetary limit. Over the years the budget has expanded but neither the approach nor the overall philosophy has changed. The savings - whether of money, energy or CO₂ – have been the outcome. The starting point has always been the amount of money available to the schemes.

Energy efficiency experience to date has been very positive for customers, NIE and all the other voluntary and statutory bodies and private companies involved, and has scored consistently well in value for money terms. It is this wealth of experience and the capacity for delivering energy efficiency on a greater scale which make it possible to give serious consideration to reversing the chain of causation and the approach to energy efficiency. Energy efficiency in future should be driven by radical reduction targets which will dictate the resources allocated to those targets. In other words the budget should be driven by the pre-determined desired outcome; not the outcome constrained by the pre-determined size of the budget. This approach would sit better with the DETI energy efficiency objective than the budget led approach.

The growth in energy efficiency delivery capacity makes this change of approach possible. The rising cost of energy improves the payback for energy efficiency expenditure and makes this proposed change of approach economically rational; the accelerating threat of climate change makes it environmentally desirable.

PART 4

What to aim for?

While the Energy Efficiency Fund should be available for all, the measures described below relate to the 99% of customers who are small or domestic customers.

If policy is to work as intended, it has to be effective has to be capable of being delivered in a cost effective way. With energy efficiency in the domestic and small business sectors there are three distinct categories of investment decision to consider.

The first is the new build – primarily domestic but also including small scale commercial. Here the emphasis should be on absolute minimisation of energy imports through sensitive design and capitalisation of energy expenditure into the fabric and structure of the building.

The second category is existing buildings which on average will have several decades of life left and in some cases a century or more. These will represent the largest field of activity and the greatest aggregate savings opportunity. But on average old buildings will always be likely to import more energy than properly designed new buildings. Here the opportunities will be for retro-fitting insulation and heating and hot water systems.

The third category is what might be termed mobile infrastructure – that is all the energy using appliances which will be used in any building and which will be replaced several times during the lifetime of the building. These will account for most of the electricity usage in the building and the key factor here will be ensuring that consumers use efficient appliances.

There is a critical fourth area which needs to be considered. That is human behaviour. While appliances may be efficient and while it may be possible to increasingly minimise the “damage” done by their human operators, in practice it is certainly the case that a great deal of energy is currently wasted because of careless or lazy or

inappropriate behaviour. The last NIHE Home Energy Conservation Agency (HECA) report highlighted this and even suggested that the scope for easy i.e. technology generated, savings may be coming to an end and that the next phase in meeting the rest of their HECA target will require them to make the much more difficult savings which only changing behaviour could produce.

In addition there are large scale energy users in factories, public buildings, hospitals etc. Almost all these types of energy users are already subject to rigorous economic pressure to minimise their energy consumption and there are specialist agencies such as the Carbon Trust and Invest NI to assist them to identify the best options. It is proposed that large scale users and their suppliers should be able to access the energy efficiency funds proposed in this paper. However, it is not otherwise proposed to cover their energy efficiency needs in this paper since opportunities are frequently case by case specific and generally speaking normal economic signals will ensure that the large users do avail of whatever resources are available.

PART 5

Halfway there in five years?

Based on the assumption that at any point in time energy savings of 20% could be made it is proposed to recommend programmes which if fully implemented could reduce the energy usage of the domestic and small business energy user by 10% over the next five years below the level which it would otherwise be at.

In the domestic sector, electricity consumption accounted for 3,107 GWhs in the financial year April 2004 to March 2005. For the purpose of this consultation, Small Business user shall include all non domestic customers below a particular annual usage threshold of 0.790 GWh (which was the first “eligibility limit” at the start of market opening in 2001). In this small business sector, electricity consumption accounted for 2,360 GWhs in the financial year April 2004 to March 2005. Both sectors together accounted for 5467GWhs in this period. With consumption in the domestic sector growing by 2.6% per annum since April 2000 and at a rate of 1.7% in

the non domestic (small business user) sector from the year 2003-2004 to 2004-2005, it could be assumed that joint consumption in these sectors may have grown to 6100GWhs in five years time. If half of the potential saving were to be made then this suggests that electricity consumption in these sectors should be no higher than 5490 GWhs by the year ending 31 March 2011.

Using previous growth figures in the domestic sector of 15,000 customers per annum since April 2000, and growth figures in the small business user category of 2,180 customers per annum we can estimate what the growth across these two sectors might be in the next five years. If the number of new customers in these sectors grows by 17,180 per annum in this period, from 756,850 to 842,750, this suggests a decline in average consumption from 7223 KWh per annum to 6514 KWh per annum would be necessary to effect a 10% reduction in electricity usage .

On this basis average consumption per consumer would fall but aggregate consumption would not; the latter should, however, be mitigated in environmental terms by the continued fall in the amount of CO₂ associated with each unit of electricity consumed.

PART 6

Funding Energy Efficiency

The necessary investment in energy efficiency requires to be funded. The EEL produces about £4.8m per annum but it cannot be increased without a direct impact on electricity prices. But even if it were larger, experience to date shows that while it has an excellent record in promoting cost effective energy efficiency it has not changed the way suppliers view the energy market and its impact on developing the Energy Service Company (ESCO) approach has been minimal. Moreover if energy suppliers are required to either spend a certain amount or achieve certain levels of CO₂ or energy savings, neither of these approaches will do anything to achieve a vigorous and creative ESCo market.

This is why the central plank in the strategy has to be free access by any supplier to a fund from which it can draw on the merit of its proposals and not on the size of its customer base or the strength of its balance sheet.

A levy on Suppliers

It is therefore proposed that in order to finance an expansion of energy efficiency, all electricity supply licence holders should contribute to a general fund on the basis of their energy sales. But in return all supply licence holders should be entitled to bid for funding from the fund on the basis of their proposals.

The size of the fund should be set at the level required to achieve the pre-determined energy savings required in the coming year allowing some margin for companies to make profits from out-performing. The contribution required from each supplier should be a percentage of the previous year's electricity sales revenues. Thus a supplier who did not want to promote energy efficiency programmes would contribute to the fund and could continue as before. A supplier who wanted to become an ESCo could have access to funds – at no opportunity cost to its business – potentially much greater than it could allocate itself from its own resources.

Moreover the levy – which would become a required licence condition – would be on revenue from energy sales and not total turnover. Thus a company would not pay levy in respect of any revenues it earned by virtue of being an ESCo.

The money in the Energy Efficiency Fund would be available to all suppliers including those supplying large customers. The allocation of the monies in the fund would be on the basis of the cost effectiveness of the bids submitted by the ESCos and ESCos would have the incentive to outperform against a benchmark set by the Energy Savings Trust (EST).

If in aggregate the bids to meet the target did not consume all the funds available, the suppliers' levy would be reduced in the following year. Thus collectively the suppliers would have both a particular and an indirect incentive to be efficient. This

is reinforced by the uncertainty that suppliers could pass the levy directly or fully on to customers in their final price.

PART 7

Moving to Energy Services Companies (ESCO)

The approach to energy efficiency outlined in this paper relies on creating a market structure in which electricity suppliers will be incentivised – or at least those suppliers who want to be – to graduate from merely selling electricity to selling electricity services.

For at least a decade energy suppliers have considered the merits of becoming ESCOs. That is to say companies which sell to their customers the services which energy provides – such as light and heat – rather than crude energy in the form of kilowatt hours of electricity or gas. There has been some movement in giving effect to this aspiration but it has been regulation driven rather than as the result of capturing a market based dynamic. The logic of the market remains overwhelmingly one in which energy suppliers make their money by selling raw energy. NIE Supply is probably the only energy supply company which makes any contribution to its profit line from outperforming against energy saving targets.

The logic of energy efficiency policy is to shrink the market for raw energy. The normal pressures of competition would suggest that prices would fall in these circumstances. But there is little room for cutting prices and if this were to happen it would weaken the pressure for energy efficiency. Market shrinking would in any case not reflect a reduced demand for energy services. On the contrary – these will continue to grow.

In these circumstances energy suppliers will either shrink, or compete vigorously to maintain market share, or diversify.

For the energy efficiency strategy to work, it is critically important that they diversify by becoming energy service companies and compete vigorously and creatively as ESCos and not as energy suppliers.

The Dual Fuel Route to ESCos

To be successful an ESCo has to operate on the customer's side of the meter. The successful ESCo product will be one which minimises costs for customers by influencing the technology the customers use to obtain the heat, power and hot water they use and possibly the times of day when they use it.

A successful ESCo is therefore going to need to have at its disposal all the technologies and appliances which transform raw energy into the services the customer wants. Either by itself or in partnership, the ESCo should be dual fuelled in respect of each customer and possibly multi-fuelled in relation to the general customer base. This means in effect that each electricity supplier should be able to sell gas or oil and other heating fuels either itself or in a close partnership with another energy supplier.

Since some of the energy sources which would have the greatest impact on reducing CO₂ emissions are based on indigenous energy sources such as biomass – in particular wood pellets – and ground source heating, it is particularly desirable that these energy sources are able to be incorporated into the dual fuel approach.

PART 8

Remedying the Past: Facing the Future

The fund would in addition to the levy on suppliers include the proceeds of the EEL plus the revenue raised from the connection policy – net of actual connection charges incurred by T&D and rebates. The connection charging policy is described in Part 9 below.

It would be short-sighted to continue with policies which assumed that the future would be like the past with change occurring slowly and incrementally. It could be, but to allow this to be so would be to lose a major opportunity. We now have the technological ability to capitalise into the cost of new buildings much of the buildings' lifetime energy requirements. Rising costs of primary energy sources and growing security of supply concerns provide the economic incentive to do so. Climate change adds an environmental imperative.

If the ESCo approach is to work it should result in companies taking radically different approaches to existing and new buildings. Energy companies should seek partnerships within the construction and financial services industries. For a decade until such practices become normal it may well be the case that those who build or finance new buildings would need the comfort of a direct capital investment by an ESCo or indeed the ESCo might lease the energy services part of the building. It is for the liberalised market to produce the most effective solutions. The key objective is to ensure that capitalising future energy costs in new construction becomes normal.

The existing building stock – which changes slowly – will provide the main market for ESCos for the next thirty or forty years, as buildings are upgraded and adapted to new technological opportunities.

Market liberalisation – which will occur in the domestic sector in 2007 and which is the subject of a separate consultation – provides the context within which ESCos will operate. The proposals in this paper, by which the individual supplier is not at risk in providing energy efficient investment in a property, should remove the argument that full market opening will remain a barrier to ESCos. However, rules will need to be put in place by which if a customer switches supplier the new supplier will have to buy out from the old supplier the old supplier's interest – if any – in the appliances in the building or household.

Space and water heating account for a large part of the energy usage of buildings and it is as important to focus on these areas as on electricity consumption. With new buildings the opportunity exists at the design stage to minimise the need to import electricity, and renewables such as photovoltaics and ground source heat pumps ought

to be incorporated into the design of new buildings. For existing building in urban areas the economics of retrofitting are not as good and the most cost effective approach to the existing building stock is probably to convert where available to natural gas and if the technology becomes available economically and opportunely, to domestic combined heat and power plants (dCHP). This should however be against a background of effective insulation and cavity wall filling where these are still options whose full potential has to be realised.

In 2001, the average dwelling in Northern Ireland emitted 9.04 tonnes of CO₂ each year on account of its space and water heating. In recent decades the widespread conversion from coal to oil – up from 19.1% of Northern Ireland domestic energy consumption in 1990 to 45.2% in 2001 has contributed to the reduction of household emissions. The conversion to natural gas results in a further gain. Over then next ten years a further 200,000 households in Northern Ireland should switch to natural gas. Assuming that 20% of these households switch from coal to gas, and that 80% switch from oil to gas, this should on average result in a reduction in household CO₂ emissions of 295,920 tonnes per annum. (This figure uses the example of a 3 bedroom semi-detached house currently using 15,000 kWh per annum for space and water heating.) If even 50,000 of these households had dCHP and produced about 80 GWhs of virtually carbon free electricity per annum this would avoid about 22,291 tonnes of CO₂ per annum.

Both existing and new buildings represent an excellent opportunity to be combine security of supply with the encouragement of rural economic development by sourcing their space and water heating fuels locally. Given the appropriate policy framework, rural areas in ten years time should derive all their space and water heating requirements from biomass, ground source heat pumps and solar power.

These alternative energy sources for rural areas are of concern to the Authority because they impinge on our electricity and gas duties. We have a duty to promote the development of the gas industry and that duty implies that we must recognise the limits of its development beyond which it must not stray. But we cannot know where those limits are set if we do not have a clear understanding of the economics of rural energy.

With regard to our electricity duties we must have regard to the potential impact of rural energy on the production, distribution and consumption of electricity. Some technologies such as ground source heat pumps require the support of considerable amounts of electricity, others will displace grid delivered electricity and others yet again may export to the grid and provide network support and reduce the need for rural network investment. A rural energy strategy must therefore be fully aligned with the gas and electricity regulatory regimes. With full electricity market opening this becomes even more important as an obvious market opportunity exists for a dual fuel electricity supplier to offer both electricity and wood pellet based heating systems or electricity plus ground source heat pumps where the attraction for the supplier is that the household electricity bills would be large but there would be no heating fuel to supply. Environmentally this might fit very well with a renewable supplier.

If the overall total for space and water heating of domestic buildings is measured as CO₂ emissions of 6.3 million tonnes per annum then making 10% savings in five years suggests that this should be reduced to 5.67 million tonnes by 2011 plus whatever is allowed for new buildings. Using the new dwelling figures from the last five years, and assuming a similar growth rate over the next five years, it could be assumed that 64,432 new dwellings might be built over the next five years. If these buildings had half the energy requirement for space and water heating of existing buildings, this implies an additional 291,232 tonnes of CO₂ could be avoided. The estimated 5384 dwellings which might go out of use and or be demolished should then be also subtracted from the total. Taking into account the new dwellings which might be erected and those which might be demolished, the total CO₂ emissions by 2011 before the 10% reduction is considered might be 6.5 millions tonnes per annum.

In this case carbon is a useful proxy for the energy and cost savings that it is desirable to make and has the additional advantage of ensuring that energy savings are not made at the cost of moving to more polluting forms of energy usage. Generally speaking falling CO₂ emissions will indicate that less energy is being used and if less energy is being used costs must also be falling.

If the total CO₂ emissions from domestic space and water heating is to fall to 5.67 million tonnes while accommodating a net increase in dwellings of 59,000 new dwellings, this indicates that if on average the 64,000 (gross) new dwellings have half the CO₂ emissions of the existing stock that the emissions from the existing stock need to fall by about 15% or 1.33 tonnes of CO₂ per annum – a fall which is attainable through conversion to gas or other available heating technologies.

PART 9

The need for boldness in energy efficiency programmes

If energy efficiency is the area on which to focus for the next ten years then there is little point in continuing to merely do more of the same. This is not to decry what has been achieved to date or what further achievements will undoubtedly flow from an incremental approach.

While the key proposal in this paper is the need for an enhanced Energy Efficiency Fund largely funded by a levy on suppliers, other measures are also required. There is also the question of the sort of measures the fund should support. But the problem with energy efficiency in this mode is that it doesn't catch the attention of consumers. Radical measures which customers are forced to respond to might be much more effective. The following measures are therefore put forward for consideration:

A Sustainability Connection Charging Policy.

The average number of new dwellings completed in Northern Ireland over the last five years is 12,886 per annum. At present the standard connection charge for developments of 12 or more dwellings is £315. For single dwellings this figure will depend upon location and the equipment needed for the property. It is proposed that a charge of £6000 per dwelling be levied instead but with a large rebate of say £5500 if the dwelling meets efficiency standards by having first class insulation, natural light, passive solar heating, PV, or domestic CHP or ground source heat pumps or biomass space and water heating which brought the dwelling significantly above the improved standards required by the new building regulations. The household and

indeed successive owners would enjoy lower energy bills during the lifetime of the property.

Expanding the SMART Scheme.

This NIE pilot project has been very successful in stimulating interest in small scale technologies. Its budget could be expanded by £1m per annum for five years to meet growing demand with grant support gradually reducing if the economics of these measures improve.

A Climate Change Fighting Fund.

Money for energy efficiency and renewables projects should be merged into a single Climate Change fighting fund capable of attracting levy money, private sector money and public expenditure including the surplus from the enhanced connection charge. The money should be used for a mixture of grants, soft or interest free loans through a revolving fund and equity stakes in sustainable projects. The fund should aim at starting with a turnover of £20m per annum – including the £12 m for the Energy Efficiency Fund.

Cost Reflective pricing for all.

Customers should meet the full cost of their preferred pattern of electricity usage with no cross subsidies from other customers. This could be achieved by smart metering being available to all customers. It should induce customers to be more careful about when they use discretionary electricity loads such as dishwashers thereby cutting peak demand and improving the value of energy efficiency appliances. The scope in this context for a supportive tariff for ground source heat pumps should be considered.

Rural is Green.

It is now apparent that the level of expertise exists to provide the rural parts of Northern Ireland with self sufficiency in meeting their energy requirement apart from transport – though even in transport there is considerable opportunity to move to greater sustainability in the short term through exploitation of bio-diesel. Outside the gas areas there could be a requirement on each district council or group of councils to prepare a rural energy strategy, which would have as its objective, ensuring that in aggregate in these areas within ten years, electricity and their space and water heating

requirements would be met from renewable resources. In order to pioneer this, the Authority would be happy to undertake a pilot project in association with two district councils or a group of contiguous district councils.

A revolving loan fund.

Customers wanting to install approved measures for improved efficiency/reducing emissions should be able to borrow from a revolving loan fund, interest-free. The repayment could be through the keypad meter. This would remove the problem of the large upfront cost of many desirable measures such as PV or wood pellet heating systems, converting to an efficient gas heating system or installing ground source heat pumps. This facility would be particularly applicable to appliances/measures which effectively became part of the dwelling and so would remain if the original purchaser moved on. It should remove the “front end” cost barrier which discriminates against low income households wishing to invest in these technologies.

Support for Green Mortgages.

In order to generate interest by local financial institutions in providing green mortgages – that is mortgages on property whether new or existing which met a set level of “greenness” – the Fund could agree to carry the risk on default on the first 1000 such mortgages to be set up.

Interest free loans for CHP.

CHP at the domestic or small scale level could be supported by a revolving loan fund under which the cost would be repaid over four years from the energy saving.

Can we influence behaviour?

There is strong evidence that human behavioural changes could save a lot of energy and save money and thereby reduce emissions. But because each saving is individually so small and each requires a physical effort no matter how minor it seems to go against the grain of contemporary society to expect such change to occur. It is also clear that a punitive or killjoy attitude to energy conservation is not likely to be

effective. In Northern Ireland since our appliances are imported we cannot have local technology add-ons to make either the appliance or its owner more energy efficient. Yet behavioural change cumulatively will have an impact on Northern Ireland's energy bills and with some 200,000 households being in or at risk of fuel poverty, could make a significant improvement to the household finances of many low income households. There is a need therefore for information about the value of the saving and a constant stimulus to make the effort to "switch it off" so that behavioural change comes in a form which makes the new behaviour second nature.

In recent years there have been campaigns to change some aspects of behaviour which – cumulatively – have a detrimental effect on society. Not all have been successful but it is as legitimate to seek to influence energy consumption behaviour as it is to influence diet, wearing seatbelts, drinking and driving and taking more exercise.

This should itself be the basis of public consultation and debate and research beginning with a dialogue with suppliers and NIHE and the General Consumer Council and other bodies. It is therefore proposed to commission research into what would so catch public attention as to induce such painless behavioural change as walking downstairs instead of taking the lift or switching off lights when leaving a room.

Behavioural change does however differ from the other measures in this paper in that it is less easy to create market based mechanisms to induce suppliers to promote behavioural change. The ESCo approach provides an electricity supplier with a business opportunity to sell an improved produce at lower cost and enhanced profitability. The funding of the measures through the Climate Change Fighting Fund enhances the ESCo capability and there is a measurable relationship between the measures and the improved performance around which an incentive structure can be created.

This does not so readily hold if the customer merely switches off the TV instead of leaving it on standby.

It would therefore be desirable to create obligations and incentives on suppliers to promote behavioural change. Obligations could include requirements to actively provide advice to their customers on both appliance usage and appliance procurement. Incentives might include a payment from the Fund if domestic consumption falls below a target level. However, Ofreg and NIE have for some years explored options for this kind of incentive without coming up with a satisfactory mechanism.

PART 10

Views

Views are sought from consultees on the sort of approach which would most effectively stimulate energy efficiency. The Authority does not claim any monopoly of ideas and would welcome proposals from others which it could consider – and if appropriate – consult on.

In particular views are sought on:

1. The case for a major expansion of energy efficiency expenditure;
2. Moving to a target based approach rather than a budget constrained approach;
3. Creating a single Climate Change Fighting Fund which would be a single funding source for energy efficiency and renewable energy measures;
4. Raising the money for the fund from a mixture of sources but in particular from:
 - (a) A continuation of the EEL at its current £7 per customer level;
 - (b) A supplier levy of – say – 1% of turnover or energy sales; and
 - (c) The proceeds of a sustainability connection charge.

5. Introducing a £6000 per dwelling connection charge with massive rebates for dwellings which reach high standards of sustainability;
6. Expanding the SMART budget by £1m each year on the previous year so that it reaches £5m per annum by 2010;
7. Incentivising energy suppliers to become dual or multi-fuel ESCos;
8. Developing divergent approaches for existing and new-build;
9. Exploring the scope for inducing behavioural change and creating market mechanisms which would incentivise companies to seek behavioural change.

Responses should be sent by 1 November 2005 to Lisa Mullan at:

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