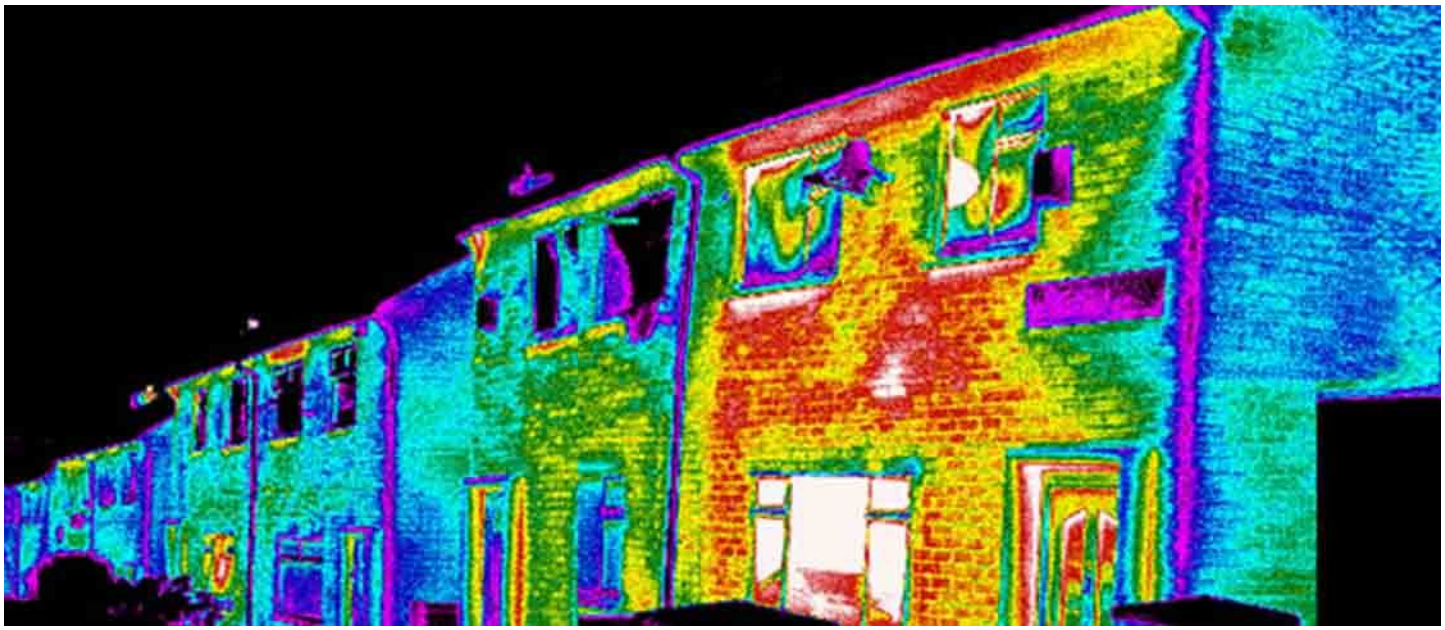
UK GREEN BUILDING COUNCIL

August 2009

Pay As You Save

Financing low energy refurbishment in housing

CAMPAIGN FOR A SUSTAINABLE BUILT ENVIRONMENT



About this report

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A full list of organisations who contributed to the PAYS Task Group can be found on Page 4

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The PAYS Task Group undertook an immense amount of work over a period of 2 months, consulting with stakeholders from right across the property industry and beyond. Over 150 people from over 100 organisations were involved.

The UK-GBC is very grateful to all these organisations who have given their time, knowledge, facilities and above all their support throughout this project.

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South East Water
Southwark Council
Sustainability by Design
Sustainable Development Commission
Sustainable Energy Academy
Sustainable Homes
Thames Gateway
Institute for Sustainability
The Housing Finance Corporation
The London Borough of Bromley
The Royal Institution of Chartered Surveyors
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1.Executive Summary

1.1 BACKGROUND AND OBJECTIVE OF STUDY

With some 45% of the UK's emissions coming from existing buildings, it is clear that a significant and comprehensive programme is needed to upgrade the performance of our existing building stock to meet the target of an 80% reduction in UK emissions by 2050 as set out in the Climate Change Act. Government has said, rightly, that emissions from our homes and buildings should be "approaching zero" by 2050.

Meeting those targets requires a step change in refurbishment activity compared to current practice, not only in terms of numbers of homes but also in the installation of more expensive and potentially more disruptive measures. Government's intention is for 400,000[1] households per year to access a comprehensive package of home energy improvements, rising to 1.8M households per year by 2020, which equates to an investment in refurbishment of between £5bn-£15bn a year through to 2020.

The UK Green Building Council (UK-GBC) has been promoting the possibility of a new form of financing for low carbon refurbishment in the household sector for some time. Known as 'Pay As You Save' (PAYS), the concept is based on spreading the cost of refurbishment for a property over a substantial period of time, across different owners. These principles were adopted by both the Conservative Party, in their 'Low Carbon Economy' paper, and also in the Government's Heat and Energy Saving (HESS) consultation document and its recent white paper 'UK Low Carbon Transition Plan'.

Whilst there is broad support for such a concept including many experts within the property and construction sector (see Low Carbon Existing Homes report[2]), there are a number of barriers to overcome in order to turn a concept into a practical proposition: technical; financial; behavioural; and legal. Building on initial proposals prepared by UK Green Building Council members Knauf Insulation and Camco, the UK-GBC brought together a range of key stakeholders to form a 'task group'[3], to address these challenges and make clear recommendations to Government.

The objective of the Task Group was to identify the range of options available, review their relative merits and then propose a single structure for the PAYS financing mechanism, describe how the mechanism would work and, indicate how PAYS might be piloted.

This is an independent report produced by a range of stakeholders to inform government thinking and it is not a statement of Government policy.

1.2 HOW PAYS COULD WORK

This section briefly describes how a PAYS scheme could work in practice including key features. Some elements are not exclusive to a PAYS scheme but are included if they are necessary critical for its successful operation at a mass scale. For a detailed explanation see section 4 of the main report.

[1] Heat and Energy Saving Strategy Consultation February 2009 paragraph 1.23

[2] *Low Carbon Existing Homes* was supported by the Energy Efficiency Partnership for Homes, Sustainable Development Commission and the Technology Strategy Board. http://www.ukgbc.org/site/document/download/?document_id=371

[3] UK-GBC task groups specialise in incorporating a diverse group of stakeholders, forging consensus and presenting practical solutions. See www.ukgbc.org/site/taskgroups for more information.

1.2.1 Overview

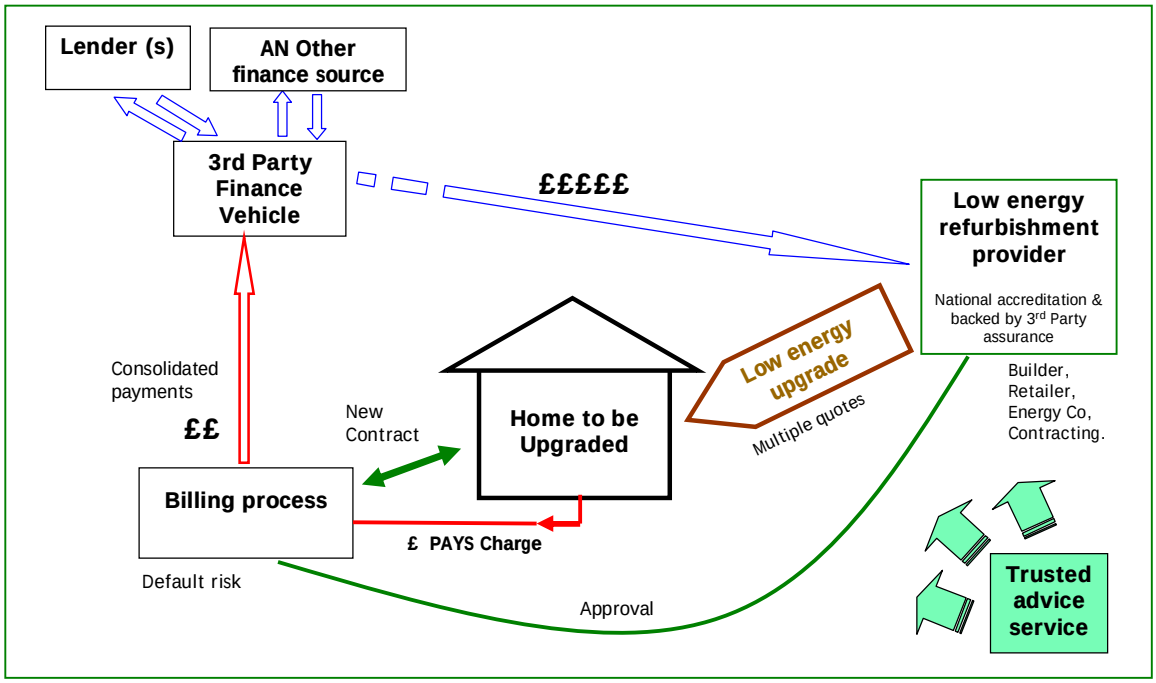


Figure 1 Pay As You Save Mechanism

A low energy refurbishment provider uses finance, from a third party, to cover the upfront costs of the low energy work. An obligation to repay is linked to the property over an extended period of time and the repayments are calculated to be less than the savings that will be made on the fuel bills. Crucially, at change of tenure the benefit of the measures and the obligation to pay is transferred to the new householder. The PAYS Charge is collected by the local authority. The upfront costs are moderately subsidised and/or carbon reductions purchased and incentives are provided to encourage mass take up. The work is undertaken by an accredited company with rigorous enforcement of standards and the mechanism as a whole is promoted by trusted 3rd parties.

1.2.2 Householder proposition

A householder intending to undertake work on their property (which may or may not be energy related) approaches the appropriate company, for example, a retailer, small builder / contractor or an energy company. In addition to discussing the specific householder requirements the company introduces the opportunity for reducing the energy consumption at the same time via PAYS scheme. This information can be supplemented by trusted sources such as their local authority, Energy Saving Trust and third sector organisations. Following a whole house assessment, the company presents the options to the householder together with the projected savings, the subsidy available, any incentives and the resulting PAYS payment schedule. The repayment mechanism and the contract are explained. The householder obtains similar quotations from other companies and makes a decision. Should the householder proceed with a package of work, a contract would be signed allowing the PAYS Charge to be attached to the property. The local authority adds this payment onto their billing system and invoices the householder to the agreed schedule.

The upfront costs supported by PAYS is up to £10,000 and the typical net savings (after the annual PAYS Charge obligation has been met) would be of the order of £50 to £200 per year (based on gas heating) depending on the extent of the low energy upgrade undertaken.

1.2.3 Householder – PAYS design features

Trigger points and providers
In many cases the low energy refurbishment would be undertaken in conjunction with other work that is planned. To facilitate this, the service could be offered by multiple providers, expanding their original business, who would provide a one-stop-shop service including: the original work, the low energy work, access to finance and subsidies, workmanship guarantees and performance assurance either alongside or separate to the other work originally planned by the householder. The PAYS mechanism must also work in such a way that it complements, and is able to be used alongside, established finance mechanisms for refurbishment work (e.g. home improvement loans for kitchen/bathroom).

Incentives
Research suggests there are many environmentally aware households to whom this scheme would be attractive since they are already motivated to act and simply lack access to upfront capital[4]. However, in order to drive mass-scale take up, since the anticipated annual savings to the householder are likely to be modest, a range of strong incentives may be necessary to complement the PAYS mechanism.

Due to the constraints of time, exactly how such incentives would work was not discussed in detail within the PAYS Task Group. There were a range of potential incentives that were raised:

- Stamp duty, council tax or other market mechanism;
- Reduced VAT on work undertaken as is the case for professionally installed loft and cavity wall insulation;
- Cash back to help alleviate the short term disruption impacts on the householder.

Subsidy
A subsidy is provided based on the CO2 savings achieved and paid for via the Supplier Obligation (CERT), direct government grant or another scheme. This is both to encourage take up and to ensure that PAYS works across the breadth of the housing stock, at a mass scale.

Measures
The PAYS mechanism would support all measures which cost less than they save over their lifetime after any subsidy / optional householder contribution. The measures are not limited to energy saving measures and could include micro-renewables (with a renewable energy tariff and/or householder contribution), and even water reduction measures etc. Examples might include: floor insulation, heating controls, PV panels, Ground Source Heat Pump, aerated shower heads etc. For the sake of simplicity these are referred to as “low energy measures” throughout this report.

1.2.4 Delivery and assurance

To ensure householder and lender confidence, access to the PAYS financing mechanism would only be available to accredited providers. Work would be undertaken to strict quality assurance processes, using systems that have had their in situ performance verified have agreed levels of insurance and where robust complaint handling processes are in place.

The accredited low energy refurbishment provider would arrange the upfront finance for the householder, organise eligible subsidies and facilitate the billing contract as well as organising the work. The customer enters into a contract with the accredited provider who in turn arranges for the charge to be collected via the billing mechanism (see 3.4 below).

A comprehensive ‘whole house’ energy improvement plan would be provided, even if works are to be staged over time. The energy saving estimates would be based on a standard assessment

[4] For example, in a recent Ipsos Mori poll of 1,000 adults on low carbon lifestyles, 15% of participants stated that they would be very interested in a long term zero interest energy efficiency loan with repayments spread across energy bill reductions (Low Carbon Lifestyles: Still Searching for Gladwell's Tipping Point, Icaro Consulting, April 2009

process used by all providers (such as full SAP). Where appropriate, a more bespoke energy savings estimate would also be provided which better reflects the actual occupancy type in order to ensure the projected financial and energy savings are broadly appropriate for the particular household considering the low energy work i.e. in the case of households that are under-heating their homes. The plan document should highlight appropriate trigger points and sequencing for undertaking measures such as a recommendation to internally insulate the kitchen when next fitting a new kitchen or fitting a dual coil hot water tank when a replacement is due in readiness for fitting a Solar Hot Water system. This advice, the charging schedule, and the projected financial savings will be clearly documented and together with the Energy Performance Certificate (EPC) form part of the information provided at the point of sale.

As part of the PAYS 'package', householders will receive appropriate advice and training to ensure they understand: how to operate any new controls, what to expect from the low energy upgrade, how they use the home will affect the actual level of savings achieved. The householder will be made aware that savings projected are on standardised usage.

The whole process, including post works support and advice, would be supported by advice and communications from trusted sources such as the local authority, Government, Government agencies (such as the EST) and third sector organisations.

1.2.5 Finance

The low energy refurbishment provider receives finance directly from the 3rd Party Finance Vehicle upon contract agreement with the householder.

The 3rd Part Finance Vehicle is financed through capital sourced primarily from the private sector such as; bank loans, issuing corporate bonds or raising equity finance from investors. In order to keep interest rates down to householders this would be underwritten by the Government to reduce the investment risk. To keep the monthly capital repayments low for householders a 25 year term is used.

In order to create attractive investment conditions:

- There must be significant consumer demand generated either through consumer marketing and incentives and / or regulatory action;
- The investment proposition must work for all parties – banks, government, private sector participants and consumers;
- Debt risk is managed by the biller (local authority), with some debt risk potentially mitigated by a level of support from the Government;
- The system needs to be simple to ensure success;

The capital raised sits within a 3rd Party Finance Vehicle which will initially be established as an arm's length Government vehicle (such as an Infrastructure Bank), with subsequent encouragement of the market to establish more.

1.2.6 Billing

In terms of the billing process, both council and electricity billing are workable models. Other options considered were: Using the Council Tax system, Gas bill, Water bill and Telecoms bill although these were discounted.

Both the council and electricity billing have advantages and disadvantages and both warrant further development. However, on balance the council billing route was preferred.

In brief, Local Authority billing offers:

- a relatively simple way to link payments to the property rather than the individual consumer

- Whilst consumers change energy suppliers frequently, local authorities change rarely and if they do so the rights and responsibilities transfer automatically.
- Local authorities tend to be viewed as 'trusted organisations' which adds a level of third party endorsement especially as they are not profit making.
- The proposed mechanism can be presented as a periodic payment obligation running with ownership of the property clearly differentiated from a personal loan.
- The PAYS Charge is not linked with a bill which is volatile and expected to rise significantly over time.
- A charge on a home is not uncommon so is less likely to be perceived as unusual by potential purchasers of properties
- Councils tend to have a low default level and a greater and potentially stronger powers / appetite to recover debt.
- Council billing systems would need to be modified where as the energy billing route would need a new and separate national charging mechanism.

On the negative side: it is more immediately intuitive for an energy related cost to be included on an energy bill, a proportion of householders have their council tax bill paid for them so there is a risk the bills may be ignored and, there are many local authorities.

Both billing approaches will require legislative changes.

Legislation
Local authorities must be enabled to create a PAYS Local Land Charge through new legislation to secure the payment obligation. The legislation should be drafted to allow for monthly payments over 25 years or for earlier repayment. The legislation could be drafted in such a way as to place the obligation to pay on someone other than the ultimate freehold owner such as the occupier from time to time, similar to the principles for payment of council tax.

A mechanism must be inserted in the legislation to deal with enforcement, e.g. a requirement to repay to be recoverable summarily as a civil debt (i.e. does not require lengthy proceedings but gives access to the court enforcement mechanisms). This must allow for robust enforcement, appropriately applied with a range of available collection routes, otherwise exposure to default will undermine PAYS by forcing up interest rates to cover the risk or expose the Local Authorities or Government to considerable costs.

The legislation could expressly provide that the local authority have the powers to administer the PAYS scheme. This will remove any doubt held by individual local authorities that the use of the well-being powers to administer the scheme is not possible.

Local authority billing process
The new legislation enables the local authority to be able to create a PAYS Local Land Charge to secure the payment obligation. The Local Land Charge attaches to the Property and not to the current owner and it does not appear on the title of the Property at the Land Registry. Instead, it is kept upon the Local Authority Register of Local Land Charges. Upon a conveyance of the Property the solicitor of the purchaser will undertake a Local Land Charges search and obtain a report from the local authority.

The local authority maintains a schedule of payments to be made for each property and information on payments received. The local authority uses the same billing process as Council Tax and either presents the PAYS amount clearly separated at the bottom of the bill or on a separate piece of paper. Further work is necessary to determine the best approach.

A level of default risk will be carried by the local authority and this would be factored into the interest rate charged. Agreement is required between the Government, local authority and 3rd Party Finance Vehicle on the detail of how the default risks are ultimately borne.

If the owner / occupier is unable to meet the periodic payments under the PAYS scheme (e.g. is fuel poor) they could agree with the local authority to reduce their periodic payments with the balance being rolled up to be repaid on sale of the property or at another agreed point.

1.2.7 Future property sale

Unlike a low energy refurbishment funded by the householder's own money (where the capital outlay needs to be recovered by an increased valuation compared with a 'typical house'), with PAYS a 'neutral' valuation is enough to ensure the vendor is not out of pocket.

On the assumption that the standards and accreditation process ensures that projected savings are less than or equal to the PAYS charge, that the PAYS charge is not significant relative to the value of the property, that it is attached to the property as a land charge and, that there is a charging schedule which carries over from householder to householder on sale then, on a generalised basis, the effect on valuation is unlikely to be significantly impacted negatively or positively.

Over time, as energy prices rise and society becomes more 'carbon conscious', then additional value may be attributed to low energy homes by prospective purchasers. This represents an upside potential.

1.2.8 Variants for other tenures / situations

The Task Group also considered how PAYS might vary for the social housing, private rented and New Build sectors. Details can be found in the full report.

1.2.9 Fuel Poverty

PAYS was not originally conceived as an approach to tackle fuel poverty. After consideration of the implications of PAYS for this group, it was concluded that PAYS is not a strong solution to alleviating fuel poverty in its own right. It may help in certain instances: where a householder has a low income but has considerable value in their property or if the subsidy available is high. It could be effective at preventing people falling into fuel poverty as energy prices rise and may indirectly assists by providing a mechanism where the level of subsidy for 'able to pay' is minimised freeing up Government funds to focus on fuel poor.

1.3 KEY CONCLUSIONS AND RECOMMENDATIONS

1. PAYS could offer a real and workable solution, financing low energy refurbishments, with no upfront cost to the householder in many cases. PAYS could also be effective for funding 'consequential improvements' and in reducing some of the upfront costs of new build low energy homes.
2. Wholesale finance providers are interested in the PAYS proposition provided there is confidence that significant take-up will be achieved. Capital could be sourced from the private sector. The money should be held by a third-party finance body, underwritten by Government in order to keep interest rates low for householders.
3. To avoid negative reactions to 'loans', 'interest', the extended term length and, 'pay-back' as well as to normalise the process of passing the 'PAYS Charge' from one householder to the next, consideration should be given to presenting PAYS should be presented as a monthly schedule with the PAYS Charge listed alongside the projected savings together with having a smooth, legislated, process for transferring the PAYS Charge from one householder to the next at change of tenure.
4. All billing mechanisms have advantages and disadvantages. Local authority billing of the 'PAYS Charge' is the preferred option although Electricity billing is not discounted.
5. Although it is possible to place a charge on a property without any legislative changes, certain characteristics make this highly undesirable. For the preferred model, by which the

Local Authority places a Local Land Charge on the property, primary legislation will be required. Primary legislation would also be required to use the electricity billing route to give the electricity supplier and the Distributed Network Operator (DNO) the requisite powers to administer the scheme.

6. Effective roll-out will require: support for the consumer and to grow understanding and demand (including marketing and communication); development of robust standards and accreditation to build confidence; and integration of low energy refurbishment within general home improvements to minimise disruption.
7. PAYS should be aimed at "the willing" in the first instance (4% to 20% of householders); achieving mass take up within the short timescales proposed is likely to require additional and powerful incentives such as stamp duty/council tax or other market mechanisms.
8. A subsidy scheme will still be required to ensure that the savings are greater than the costs using a PAYS approach when applied to the breadth of the housing stock and at a mass scale.
9. Unlike other financing mechanisms which require an increased value at point of sale for the householder not to lose out financially, a PAYS funded low energy refurbishment is not dependent on the property price rising. Subject to a range of conditions being met, including confidence that measures actually deliver the level of savings projected, the costs of low energy refurbishment can be 'passed on' at change in tenure by PAYS without detriment to the valuation.
10. PAYS would benefit from extensive piloting to refine the proposition and test the householder appeal, and a range of organisations from different sectors are keen to help take this forward.
11. Smart meters could potentially play an important role in showing the householder the energy savings that have been made. With the Smart Meter roll out underway this opportunity would need to be progressed rapidly.
12. Once the legislation and mechanisms are in place, a 'soft start' is likely to be necessary to avoid overheating the industry and to allow growth of the requisite skills in a robust manner.
13. To ensure a smooth roll out of PAYS a high level steering group made from senior representatives from stakeholder organisations should oversee its introduction.
14. Cross party support for low energy refurbishment facilitated by a Pay As You Save type scheme would provide industry with the confidence to invest in training, skills and market development.

2.The Low Carbon / Energy Housing Challenge

2.1 BACKGROUND

Around 45% of the UK's emissions come from our existing buildings. Therefore in order to ensure that the Government meets its target of an 80% reduction in UK emissions by 2050 as set out in the Climate Change Act 2008, it is clear that we will need a significant and comprehensive programme to upgrade the performance of our existing building stock.

Last year, the UK Green Building Council (UK-GBC) carried out a major piece of stakeholder engagement work on carbon emissions in existing homes, and reported to Government in October 2008. The work was acknowledged in Government's consultation on the Heat & Energy Saving Strategy (HESS) in February 2009.

We are encouraged that Government has recognized the scale of the refurbishment challenge, the speed with which this must be undertaken and the opportunities for achieving dramatic carbon emission reductions from buildings. The draft HESS proposes that by 2030 all homes and other buildings will have received a 'whole house' package of measures and that emissions from buildings should be 'as close to zero as possible by 2050'. This level of ambition is right and necessary.

2.2 THE SCALE AND COST OF THE CHALLENGE

The level of ambition set out in the draft HESS represents a step change from the current model. Aside from the delivery of measures secured through direct government intervention and regulation, a mainstream market demand for low energy improvements does not yet exist[5], even though there are overall financial and comfort benefits to the householder.

The Carbon Emission Reduction Target (CERT) is delivering cavity wall, loft insulation and low energy lighting at a significant rate (it is designed to deliver savings of 5.6MTC pa). These particular measures, which cause little disruption in the home and have a relatively quick payback, will be delivered to the majority of homes that need them by 2014-16.

Meeting the new targets will require refurbishment on a wholly different scale, not only in terms of numbers of homes but also in the installation of more expensive and potentially more disruptive measures. The government's intention is for 400,000 households per year to access a comprehensive package of home energy improvements, rising to 1.7M households per year by 2020. Of this, 500,000 per year are 'harder to treat' (e.g. solid walled) – this category alone equates to refurbishing all the homes in a city the size of Sheffield every 6 months. The estimated costs per dwelling, including renewable heat technologies, range from approximately £5,000 - £30,000 per property. This would equate to an investment in refurbishment of £5bn-£15bn a year through to 2020.

CERT, the Government's main scheme for financing energy efficiency upgrades in homes, currently provides subsidies of between 50% and 100% of the cost (dependent on circumstance). It delivers around £1.4bn of energy efficiency improvements and adds approximately £35 to each household's fuel bills per year. An issue with the current CERT approach is that the costs are socialised over all householders yet the benefits are only accrued by those in receipt of the improvements. If the HESS ambition was subsidised in the same way, this could equate to approximately £100 to £300 being added to fuel bills per household per year, and without appropriate safeguards this could have significant impacts for those in, or close to, fuel poverty.

[5] See reference 4

It is, however, important to note that the CERT investment provides financial benefits: on average, CERT costs £35 per household per year but saves an average of £145 pa[6] over the lifetime of the energy efficiency measures installed. Even high cost energy efficiency measures typically cost less than they save. Indeed, whilst £5bn - £15bn of investment a year is a considerable amount of money, it is typically offset by the savings in energy over the lifetime of the measures. The fact is that this money will be spent in any event either on energy costs or on energy efficiency measures and as energy prices rise this becomes more stark. Clearly, spending money on installing energy efficiency measures instead has the added benefit of reducing carbon emissions, as well as offering a warmer, healthier home for occupants.

Finally, the scale of the challenge also needs to be placed in the context of overall take-up rates. The HESS target is for 2% of homes to take up 'a comprehensive package of home energy improvements' per year from 2015. Whatever the financial packages made available, only a small proportion of householders will be taking action each year.

2.3 OBJECTIVES OF THE STUDY

The Government's HESS consultation document proposes a form of financing for low carbon refurbishment in the household sector which it terms "Pay As You Save" (PAYS). Central to the concept is the idea of spreading the cost of refurbishment for a property over a substantial period of time, across different owners.

Ministers have voiced support for such a scheme, opposition parties have proposed similar policies and a number of policy experts working in this sector have long advocated such an approach and are gathering increasing support.

However, as the HESS consultation suggests, there are a number of barriers to overcome in order to implement a PAYS scheme – technical, financial, behavioural and legal. Building on initial proposals prepared by Camco and Knauf Insulation, UK-GBC members, the UK Green Building Council (UK-GBC) brought a range of key stakeholders together, through a UK-GBC 'task group', to address these challenges and make recommendations to Government.

UK-GBC task groups – time-limited groups brought together to address specific problems - have previously submitted reports to overcome barriers to a more sustainable built environment, with recommendations for government, industry and other stakeholders. They specialise in incorporating a diverse groups of stakeholders, forging consensus and presenting practical solutions. See www.ukgbc.org/site/taskgroups for more information.

It is recognised that there are alternative and/or complementary low energy financing options. The task group's focus is on the practical steps necessary to implement a PAYS scheme. It was not intended for the group to assess the relative merits of the different financing approaches.

2.4 THE PROCESS

This report represents the culmination of an intensive 2 months of work by the UK GBC PAYS Task Group, which has analysed the wide range of issues needed to develop a blueprint for how PAYS can work in practice. The Task Group has been taken forward under the guidance of a core group chaired by David Adams of Knauf Insulation with project management provided by UK-GBC and Camco. Members of the core steering group have come from both within and without the UK-GBC membership and were appointed to ensure a spread of relevant expertise. The core group has met 3 times over the course of the 6 week project, and its membership is listed at the beginning of the report.

[6] DECC document: EXPLANATORY MEMORANDUM TO THE ELECTRICTY AND GAS (CARBON EMISSIONS REDUCTION) ORDER 2008

The core group structured its analysis around 10 workgroups and appointed chairs to oversee the workgroups deliberations, and to provide written and verbal reports to the core group. The 10 workgroups consisted of:

- **Householder Offer / behaviour/ demand** - considered issues such as general awareness, willingness to invest and perceived barriers/risk, linking to trigger points, reaction to charge on property and different billing routes, role of grants and incentives?
- **Impact on future property sales** - considered issues such as valuation implications, any demonstrable benefit or uplift in EPC rating, reaction to PAYS Charge on property?
- **Standards and accreditation** - considered issues such as lessons from previous schemes, national vs. local or regional, quality standards, actual v 'designed' energy efficiency reduction, performance of measures, levels of performance, audit process implications, skills & capacity
- **Financing sources and structure** – considered issues such as where could the money be sourced from, what percentage of total fund is needed, would lenders accept repayment via charge on property rather than individuals, what size of finance, expected repayment terms, costs of establishing scheme?
- **Billing solution and processes** - considered issues such as technical billing process implications, implications of payment default, billing company protection from householder dissatisfaction?
- **Legal implications** - considered issues such as how a charge can legally be placed on property rather than person, legal requirements (contracts etc), implications for house owner or tenant, implications for social and private landlord, implications for billing route
- **Social housing** - considered issues such as landlord invests – tenant saves issue, methods of recovering costs from tenants, impact on asset values, fit with other programmes and cyclical maintenance, potential to address voids, finance, balance sheet and other financial implications;
- **Private rented tenure** - considered differences in how the private rented sector might respond to PAYS and the landlord/ tenant split;
- **Implications for fuel poor** - considered whether PAYS could be applicable to the fuel poor and how arrangements for PAYS might need to differ
- **Potential application to new build** - considered issues such as whether PAYS could be applied to new build, consumer reactions, how would it work, valuation issues.

The workgroups groups typically consisted of 6 to 15 participants whose membership represented an in-depth knowledge of the specific policy area being addressed.

To ensure consistency and joining up between the various workgroups and to agree ways forward to conflicts or contradictions that emerged, a larger final half-day workshop was hosted on 2nd July by Schroder's with attendance from circa 60 working group members. This final PAYS workshop featured presentations from all the workgroup chairs on the outcomes of their workshop discussions, and concluded with a summary of the key outcomes and discussion over the preferred structure for a PAYS scheme.

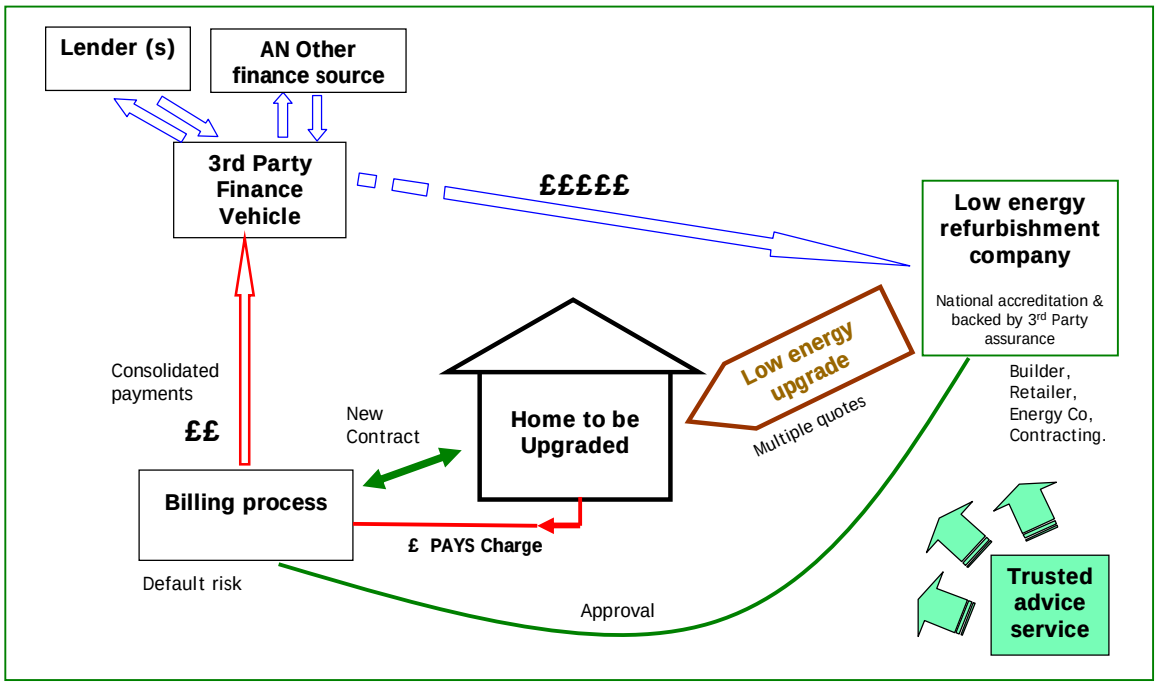
For the sake of clarity the majority of the report is structured around a proposition for an 'Owner Occupier' property. Variations of this model are then considered for Social Housing, Private Rented, Fuel Poor and New Build sectors. Where a legal perspective is taken this is based on English Law. The implications and opportunities may be different for Scotland, Wales and Northern Ireland.

The UK GBC is very grateful to all the participants of the PAYS Task Group over the past 2 Months for their invaluable contribution to the workshop discussions and this final report. The UK GBC would particularly like to thank the members of the core group and the workgroup chairs who have committed a great deal of time to the extensive discussions and the content of the final report.

3.Overview of the PAYS Model

The PAYS model can be summarised as follows:

A low energy refurbishment provider uses finance, from a third party, to cover the upfront costs of the low energy work. An obligation to repay is linked to the property over an extended period of time and the repayments are calculated to be less than the notional savings that will be made in the fuel bills. Crucially, at change of tenure the benefit of the measures and the obligation to pay is transferred to the new householder. The PAYS Charge is collected by the local authority. The upfront costs are moderately subsidised and incentives are provided to encourage mass take up. The work is undertaken by an accredited company with rigorous enforcement of standards and the mechanism as a whole is promoted by trusted 3rd parties.



The main elements of the concept are as follows:

1. Householder costs:
   A low energy refurbishment is undertaken where the upfront cost is commercially financed by a third party and repaid with interest over 25 years via a charge linked to the dwelling via an existing billing mechanism.

   The billing process consolidates the payments and routes them back to the financing vehicle. The charge is linked to the dwelling and is not a personal loan.

   Measures applied cost less than they save after any subsidy / optional householder contribution, i.e. there is a net saving from day one.

2. Subsidy:
   To encourage uptake, the package of measures is moderately subsidised using existing mechanisms such as the Carbon Emissions Reduction Target (CERT).

3. Incentive
   To achieve mass take up powerful incentives are required. These could potentially relate to Council Tax, Stamp Duty or other market mechanisms.

4. Whole house
   The PAYS mechanism is developed to fund more expensive measures undertaken as part of a comprehensive low energy refurbishment. This may mean a single major reduction in energy demand or a series of more modest yet still significant steps over time to suit the householder.

   Undertaking significant improvements in home energy efficiency can be disruptive. In order to minimise the level of disruption and also to minimise costs, linking with opportunities presented whenever other work on the house is undertaken is critical. In order to make this as straightforward as possible a range of companies would need to be able to access the financing mechanism i.e. suitable accredited: builders, energy efficiency contractors, retailers, utility companies, etc.

5. Confidence
   To ensure householder and financing confidence, access to the PAYS financing mechanism would only be available to accredited providers. Work would be undertaken to strict quality assurance processes, using systems that have had their in situ performance verified have agreed levels of insurance and where robust complaint handling processes are in place.

   Trusted bodies such as the Energy Saving Trust (EST) and or Local Authorities would run marketing campaigns to reassure householders and build the credibility of the scheme.

6. Typical eligible measures
   Eligibility of measures is restricted to those which financially 'payback' within their lifetime once any subsidy, incentive (such as feed in tariffs etc) or optional householder contribution is taken into account.

   The measures are not limited to energy saving measures and could include micro-renewables (with a renewable energy tariff and/or householder contribution), and even water reduction measures etc. Examples might include: floor insulation, heating controls, PV panels, Ground Source Heat Pump, aerated shower heads etc. For the sake of simplicity these are referred to as "low energy measures" throughout this report.

7. Consumer behaviour
   As part of the PAYS 'package', householders will receive appropriate advice and training to ensure they understand: how to operate any new controls, what to expect from the low energy upgrade, how they use the home will affect the actual level of savings achieved. The householder will be made aware that savings projected are on standardised usage.

Typical low energy refurbishment finance objections and the PAYS perspective

Typical finance objections	PAYS Perspective
Personal Loan: "I am unwilling / unable to take out a loan for low energy improvements"	A PAYS Charge is not a personal loan. In return for low energy refurbishment the householder allows a PAYS Charge schedule to be applied to the property which passes to the next householder at change of tenure.
Debt: "I don't like to be in debt"	If a home is to be kept warm then the householder is already committed to paying future energy costs the level dictated by the energy price and the energy efficiency of their home. Under PAYS householders are committed to the combination of an energy bill and a PAYS Charge where the combination is lower than the energy use before the low energy work was undertaken[7]. In effect they are paying two organisations rather than one where the total overall is less. The householders outgoings after the low energy refurbishment are less than before so the result not a 'debt' more a 'credit'. Because this is not legally a loan, there is no consumer credit check.
Extended payback periods: "I invest upfront but it takes many years before I get my money back and see a financial return."	The PAYS Charge is less than the energy savings so the householder is better off from year one [7]. The householder does not 'pre-pay' for the benefit rather 'pay as you save'.
Interest: "If this is good for society why should I pay 'interest'?"	The householder spends less after the work is undertaken than before so there is an immediate benefit[7]. The financing arrangements, including interest rate and level of subsidy, will affect how large or small this benefit is.
Long term: "I don't like the idea of this hanging over me for many years."	The long term length is required to spread the capital repayments sufficiently thinly to allow a 'pay as you save' approach without recourse to extreme subsidy levels. As the householder saves more than it costs from the first year[7], and the PAYS Charge schedule is passed on at a change of tenure, then the term length is less relevant to a particular householder. There are savings throughout the period although when the PAYS Charge ends then the savings significantly increase.
If energy prices fall: "What if energy prices fall – I'd be worse off, not better"	The PAYS mid range price assumption is based on a fall compared to 2008 prices and then 5 years to return to this level. Over the 25 year period energy prices are expected to increase significantly due to energy shortages and investments in clean energy and general inflation - not fall. The energy price rise assumptions in PAYS are conservative. Householders with low energy homes are more resilient to these increasing prices and the effective savings would be higher.
An 'extra' charge "Why should I buy this house when it has an extra charge when an identical, albeit normal energy, house next door doesn't?"	The 'unimproved house' has a higher energy bill compared with the house with the PAYS charge[7]. In effect the improved house is paying two organisations rather than one where the total outgoings are less overall i.e. you are better off in the house with the PAYS Charge. In addition, you are less exposed to spikes in energy prices, you are reducing your household's CO_2 emissions and the home is likely to be more comfortable.

[7] These are a projected savings which are specific to the particular home with the low energy work undertaken by accredited installers using certified systems but based on standard assumptions for occupancy use, energy prices etc.

4. How Will PAYS Work? Structure of the Proposed PAYS Scheme

This section describes how a PAYS scheme could work in practice including key features. Some elements are not exclusive to a PAYS scheme but are included if they are necessary for its successful operation at a mass scale. Whilst some explanation of reasoning is included for the detailed considerations see section 8 of the main report.

4.1 HOUSEHOLDER OFFER

A householder intending to undertake work on their property approaches the appropriate company. In addition to discussing the specific householder requirements, the company introduces the PAYS scheme. The householder can find out more about the scheme via their local authority, Energy Saving Trust and third sector organisations. Following a whole house assessment, the company presents the options to the householder together with the projected savings, the subsidy available, any incentives and the resulting PAYS payment schedule. The repayment mechanism and the contract are explained. The householder obtains similar quotations from other companies and makes a decision. Should the householder proceed with a package of work, a contract would be signed allowing the PAYS Charge to be attached to the property. The local authority adds this payment onto their billing system and invoices the householder to the agreed schedule.

The upfront costs supported by PAYS is up to £10,000 and the typical net savings (after the annual PAYS Charge obligation has been met) would be of the order of £50 to £200 per year (based on gas heating) depending on the extent of the low energy upgrade undertaken. The typical Pays Charge period is 25 years.

4.1.1 Trigger points and providers

In many cases the low energy refurbishment would be undertaken in conjunction with other work that is planned. This minimises the additional disruption and householder hassle as well as providing the potential for lower overall costs. The service could be offered by multiple providers, expanding their original business, who would provide a one-stop-shop service including: the original work, the low energy work, access to finance and subsidies, workmanship guarantees and performance assurance either alongside or separate to the other work originally planned by the householder. In order to make this as straightforward as possible a range of companies would need to be able to access the financing mechanism i.e. suitable accredited: builders, retailers, energy efficiency contractors, energy company, etc.

Examples of trigger points include: Extensions, Refurbishment works, major re-decorating, replacing windows or kitchens / bathrooms etc. In addition triggers such as: property purchase, rental voids or and potential long term lettings may provide occasions where householders / owners are more amenable to accepting a level of disruption for longer term benefit.

The PAYS mechanism needs to work in such a way that it complements, and can be used alongside, established finance mechanisms for refurbishment work (e.g. home improvement loans for kitchen/bathroom).

4.1.2 Incentives

Research suggests there are many environmentally aware households to whom this scheme would be attractive since they are already motivated to act and simply lack access to upfront capital[8].

For the wider audience, whilst there is a range of tangible benefits, such as increased comfort, motivation is likely to be, in whole or significant part, financial. The anticipated annual saving to the householders are likely to be modest and in a typical range of £50 to £200 per year. Therefore to drive mass-scale take up strong incentives will still be necessary for a successful PAYS scheme. Due to the constraints of time, neither exactly how such incentives would work nor the relative merits were discussed in detail within the PAYS Task Group. However suggested incentives included:

- Stamp duty, council tax or other market mechanism;
- Reduced VAT on work undertaken as is the case for professionally installed loft and cavity wall insulation;
- Cash back to help alleviate the short term disruption impacts on the householder.

4.1.3 Measures

The PAYS mechanism would support all measures which cost less than they save over their lifetime after any subsidy / optional householder contribution. The measures are not limited to energy saving measures and could include micro-renewables (with a renewable energy tariff and/or householder contribution), and even water reduction measures etc. Examples might include: floor insulation, heating controls, PV panels, Ground Source Heat Pump, aerated shower heads etc. For the sake of simplicity these are referred to as "low energy measures" throughout this report.

Where the lifetime of individual measures is less than the PAYS Charge period the PAYS Charge schedule and projected savings would reflect this.

4.1.4 Subsidy

A pay as you save approach will work for all low energy measures that pay for themselves within their lifetime after grants and householder contribution has been taken into account. A critical question is whether a grant is necessary and if so how large need it be. With the wide range of house types and low energy measures and a volatile energy price there isn't a single answer. There will be a small proportion of homes requiring little or no subsidy. The vast majority will require a subsidy at a range of costs to ensure the householder element costs less than the savings on an ongoing basis.

In short, a subsidy scheme will still be required to ensure that the savings are greater than the costs using a PAYS approach when financing costs are included and it is applied to the breadth of the housing stock and at a mass scale.

Energy companies could subsidise the upfront capital cost of measures by procuring the lifetime CO_2 savings as part of their "Supplier Obligation" to reduce demand side emissions or a subsidy could come from another source such as a direct government grant.

How such a subsidy is marketed to the householder needs to be developed. Whether presenting the subsidy as a low or zero interest PAYS Charge or whether presented as an upfront cost reduction depends on consumer reaction to the different propositions. Ultimately it is the same level of financial subsidy money presented in different ways.

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[8] For example, in a recent Ipsos Mori poll of 1,000 adults on low carbon lifestyles, 15% of participants stated that they would be very interested in a long term zero interest energy efficiency loan with repayments spread across energy bill reductions (Low Carbon Lifestyles: Still Searching for Gladwell's Tipping Point, Icaro Consulting, April 2009

4.1.5 Whole house

Whole house upgrades are likely to be relatively uncommon but ultimately this is needs to be delivered to meet Government's 2030 target. The PAYS mechanism is developed to fund more expensive measures undertaken as part of a comprehensive low energy refurbishment. This may mean a single major reduction in energy demand or a series of more modest yet still significant steps linked to 'trigger points'. PAYS should therefore appeal to a range of circumstances and approaches towards whole house refurbishment and be applicable to a large proportion of the refurbishment market.

To support a whole house delivery objective, to be eligible for PAYS a comprehensive 'whole house' energy improvement plan would be provided for the householder even though works are likely to be staged over time. This would highlight where proposed work blocks out subsequent improvements or significantly increases future costs and provides the householder with a document that highlights appropriate trigger points and sequencing for undertaking future measures. The report would provide approximate costs and estimated savings of these measures. PAYS will need to be flexible and allow individuals to undertake measures incrementally and in conjunction with a range of trigger points and other financing mechanisms. Insisting on 'one hit' whole house refurbishment is unnecessarily restrictive and to be avoided. The whole house energy plan is for information to the householder additional work at a later date is completely optional.

4.1.6 Developing trust

Individuals will need to trust a scheme that involves large sums of money and an innovative charging scheme tied to their property. Developing this level of trust will require support and a clear process for the scheme. The following principles will apply:

- Factual clarity on what the measures will achieve needs to be provided
- The billing process must be easy to understand and through a trusted body
- Strict accreditation of providers and installers is required to create and maintain confidence in the scheme
- Advice will be needed on the wider issues of energy efficiency both measures based and behavioural to ensure that the full potential is realised.
- Promotion and advice by independent, trusted, third parties to build confidence that the proposition is legitimate and not 'too good to be true'.
- Householders need to know the energy price rise assumptions behind any claims made and the impacts that winter temperatures have on fuel bills.
- There would need to be strict rules as to collection, collation, storage and use of data.
- A lack of trust could translate into a higher level of defaults which would be reflected in the interest rate charged.

4.1.7 Performance feedback

Ideally the charge would be linked to the particular energy bill where the majority of savings would be realised (usually gas). For practical reasons[9] this is not possible so feedback on actual energy performance in another way is desirable.

An alternative approach would be for the householder to have robust information in an appropriate form showing both the actual energy use and that which would have been used had the property not been improved. Irrespective of the billing route, this is challenging, however the implementation of Smart meters, with appropriate consumer interfaces, may be able to provide this functionality.

[9] circa 7 Million properties in the UK are not connected to the gas network

Installation of such smart meters could take place with each low energy upgrade in advance of the local area deployment in a similar fashion that faulty meters would be replaced during the roll out period.

Ultimately, though, PAYS will be based on a calculation of notional savings with a level of recognition of individual circumstances (e.g. low energy consumption due to fuel poverty) as individual household behaviour will vary greatly.

4.1.8 Defaults

Householders would not have to undergo a credit check for reasons discussed in section 8. Overall the implementation of energy efficiency measures should reduce the default risk on payment of energy bills as the total outgoings after the work is less than that before and the householder is in a moderately better financial position. Importantly however the billing organisation will be taking on a new default risk. As such, a robust but appropriately applied debt recovery processes will be required as default rates must be kept low to ensure interest rates are low. If default levels rise then the subsidy level would also need to rise to maintain the same household financial benefits.

Householders would be made aware that failure to pay the PAYS charge may result in court action.

4.1.9 Effective national marketing

Ultimately in order to refurbish, year-on-year, up to 400,000 rising to 1.8Million properties per year will require establishment of a major marketing programme. However, during the early years the limiting factor is likely to be industry capacity to deliver so a soft start focused on those with a high propensity to engage is needed. As such only a low percentage of dwellings each year will be able to be upgraded initially due to capacity constraints. In initially this may start at 0.2% (50,000) rising to 7% properties per annum upgraded at the peak. To stimulate mass demand, overarching marketing messages will need to be developed to: inform, reassure, motivate to action and reinforce the behaviour change messages. Information and reassurance will need to be a particular focus. The target audience would need to be on the industry professionals as much as the householders.

4.1.10 Householders perception on the maximum level of a 'charge', charge period and anticipated savings

It is suggested that a total value of works of circa £10,000 or 5% of the value of the property is a psychological maximum threshold. With PAYS the costs of works would be presented as a monthly PAYS Charge and £10,000 equates to approximately £500pa when assumed subsidies are taken into account. Further work is required to test the consumer response to this level of charge and also understand the expectation of annual saving. For the purposes of this report a householder saving requirement of between £100 and £200pa has been assumed. Section 5 shows financial illustrations of three property types and various scenarios showing the resultant household savings.

Research by EST[10] suggests that charge periods beyond 15 years were typically viewed negatively however periods less than 25 years very significantly increase the subsidy levels (see section 5).

[10] 'Energy Saving Trust (2009 forthcoming), Consumer willingness to pay for expensive low carbon technologies and the role of finance schemes and incentives.'

4.1.11 Communication

PAYS must be effectively communicated by potential providers as:

- An easy mechanism to finance work and install measures which will reduce energy consumption,
- an opportunity to do more at trigger points than might have been possible with limited capital expenditure
- a scheduled charge that covers the initial costs of the measures and installation and protects against interest rates fluctuations
- an opportunity to reduce exposure to fluctuating energy prices
- a simple charging/billing system through a trusted source

4.1.12 Information to householders

A range of information would be provided to the householders:

- PAYS Charge schedule with projected savings and base assumptions
- Schedule of work being undertaken
- Whole house low energy improvement plan for future consideration
- An updated Energy Performance Certificate (EPC) on completion of works
- User manual and warranties package

4.1.12 Further work

Considerable further work is required including piloting to develop the consumer proposition.

4.2 "DELIVERY" / PREFERRED DELIVERY OF WORKS

4.2.1 The role of the low energy refurbishment providers

Accredited providers - It is proposed that low energy refurbishment providers become a 'one stop shop' for the consumer to take up whole house refurbishment including PAYS finance. For smaller companies this may be facilitated through the use of managing agents or similar to provide the same customer experience but consolidating the back office support to achieve efficiencies through scale and also the specialist expertise.

Underpinning PAYS methodology is that the energy efficiency measures undertaken must 'do what they say on the tin' for the particular householder within a level of uncertainty. Failure to do so would mean the underpinning premise of Pay As You Save is not delivered and the consumer and professional confidence in the mechanism would be eroded. As such quality assurance is key.

The low energy refurbishment provider would be nationally accredited to enable access to the PAYS finance mechanism. At a local level, the accredited low energy refurbishment provider would be formally 'accepted' by the billing process organisation (the local authority – see later). PAYS financing should be open to any company that becomes accredited. The principal is that multiple players should be allowed in the market to provide the maximum range of choice for householders. Examples could include building contractors, retailers, RSLs or local authorities.

Establishing the PAYS Charge Schedule - The PAYS Charge schedule as well as the projected ongoing financial savings and assumptions should be clearly documented and form part of the information pack at the point of sale. The customer enters into a contract with the accredited low energy refurbishment provider who in turn arranges for the PAYS Charge to be collected via the billing mechanism (e.g. liaises with Local Authority to apply the Land Charge) . The accredited low energy refurbishment provider receives finance directly from the finance company upon sign-off of works by the customer.

Cost of Sales - Cost of sales need to be borne by the accredited supplier, with cost recovered either through sale of measures or a commission fee for placing investment etc.

Educating the customer - Part of the upgrade 'package' is providing energy efficiency behavioural advice to both ensure that the maximum level of savings are obtained and also to be clear that poor energy efficiency behaviour could negate the positive effects of the measures installed. i.e. the householder will be made aware that savings projected are on standardised usage.

A level of ongoing support and advice will be needed to maintain and enhance householder behaviour. This should be offered by the low energy provider and supplemented by trusted advice sources.

4.2.2 Ensuring Standards and Accreditation

As introduced above PAYS financing can only work if the projected savings are typically delivered averaging household to household variations. Standards and Accreditation protect the prospective purchaser from inadequate service / exaggerated claims and protect the provider from 'speculative' claims of poor delivery. To ensure the quality required is delivered a range of appropriate standards are required:

4.2.2.1 Standards

Products, Materials & Systems - All materials, products and systems used in PAYS must be demonstrated to be capable of delivering the claimed performance in situ and be backed up by appropriate quality systems with periodic re-tests on sample projects. Installation of these products and systems also needs to be accredited and audited to ensure that this is undertaken in the same manner as used in the in situ test.

Design Stage & Installation - standards must be established and enforced at the both the design and installation stages. Low energy refurbishment measures must be specified by an appropriately 'qualified' and accredited person. Standards at the installation stage must cover workmanship at all levels, and ongoing random audit should also include the quality of overall project management.

Consumer Interface – Householders need to receive appropriate advice and training to ensure they understand: how to operate any new controls, what to expect from the energy efficiency upgrade and how they can reduce consumption through behaviour change. Householders need to be provided with a full inventory of the measures undertaken in sufficient detail to inform any subsequent Energy Performance Certificate assessment.

Energy and Carbon Assessment tools and process
The projected energy savings need to be calculated in a standardised manner using a national calculation methodology with standardised factors used e.g. a common approach taken for 'comfort taking' (increased internal temperatures).
Where appropriate, an additional energy savings estimate should also be provided which better reflects the actual occupancy type in order to ensure the projected financial and energy savings are broadly appropriate for the particular household considering the low energy work i.e. in the case of fuel poor where households may be under heating their homes.

Performance estimates must be based on standardised third party in situ testing of systems which are periodically updated based on random audit tests.

The projected lifetime carbon savings should be calculated using standard assumptions agreed by OFGEM such that these can be 'sold' (e.g. purchased by Energy Company under the Supplier Obligation) or as part of wholesale financing for the PAYS programme.

4.2.2.2 Accreditation

Only providers that are accredited should be able to access PAYS finance. Accreditation should be provided by a single body only to ensure standards are maintained and continuous improvement is embedded. The accreditation process needs to be rigorous and backed up by regular audits and site visits and periodic testing. Failure to maintain standards would result in accreditation being withdrawn. Delivery of accreditation courses could still be provided by numerous training providers

4.2.2.3 Guarantees and performance statements

Holding Installers to Account - System installation must be to specified standards. In addition an appropriate level of insurance must be provided against risk of damage to the property as a result of the energy efficiency work undertaken up to a maximum value. Householders will need to be made aware that pre-existing problems which become highlighted during the survey or work will need to be rectified.
A guarantee of 'whole house' energy performance cannot be given, however, the accreditation and certification process would allow performance statements to be claimed which are sufficiently robust to inspire confidence by the householder, perhaps linked to 'typical performance' measured by a third party.

Ongoing Maintenance - Since installations and ongoing maintenance of the property will affect performance, clear information should be provided to consumers on the works undertaken. There may be a requirement that the householder undertakes ongoing maintenance as a prerequisite for some warranties offered by the low energy refurbishment provider or the accreditation body.

4.2.2.4 Enforcement & Compliance

Quality of process – There needs to be an institutional framework for delivery of the PAYS programme to take oversight of the whole process, to enforce standards and ensure compliance with scheme rules. Similar examples exist such as the NHBC, Robust details or CIGA models.

Process for dealing with complaints – If the householder has a general complaint or believes that a home is not seen to be 'performing' as expected, then a robust and formal process, linked with accreditation, must be in place to investigate and ensure appropriate action is taken. This would need to be able to differentiate between legitimate concerns and occupier influence / lack of maintenance etc.

Verification – a robust and ongoing performance verification process needs to be put in place. Similar examples include Robust details. The system needs to be strong enough to instil consumer confidence in the emerging market, yet not so heavy as to place an undue burden on low energy providers.

4.2.2.5 Skills & Knowledge

Two types of skills and knowledge development are required:

Specific training – must be provided to low energy refurbishment companies so that they are competent in performing whole house assessments and have sufficient knowledge of the particular systems and products to be installed.

'underlying knowledge' of whole house refurbishment needs to be spread across the whole industry, and integrated into all relevant courses offered by FE colleges, universities, etc. This then needs to be supplemented by training, in specific skills & trades to achieve the scale of ambition demanded by the government and, eventually, the market.

4.2.3 Implications of a mass scale refurbishment programme

Whilst not unique to PAYS financing it is recognised that mass scale upgrades could impact the visual appearance of the property externally and internally and must be appropriate for the particular properties considered. Ultimately this is the responsibility of the freeholder and planners but it should be noted that a wide range of low energy solutions are available, and more will be brought forward as the market develops, allowing energy efficiency refurbishment work to be undertaken in an appropriate and sensitive manner specific to each home. This will be of particular importance in conservation areas.

4.3 PREFERRED FINANCIAL MODEL

Those low energy refurbishment providers that are able could, if they chose, raise capital for financing the upfront costs of the work themselves using the PAYS billing mechanism to collect payment. For many providers this would neither be desirable or possible. The focus on this section is on raising wholesale finance centrally to be made available for low energy refurbishments undertaken by a range of national and local providers.

4.3.1 Low interest rate required

Maintaining a low interest rate on the wholesale finance is essential for reducing the end cost to the consumer and therefore reducing the subsidy required for PAYS to work on a mass scale across multiple property types and measures.

4.3.2 Raising Finance for the 3rd Party Finance Vehicle

Finance for PAYS will be sourced primarily from the private sector, with Government underwriting support on the raising of low interest funds over 25 years. Investment could take the form of grant, debt or equity. In order to create attractive investment conditions:

- There must be significant consumer demand generated either through consumer measures and / or regulatory action
- The investment proposition must work for all parties – banks, government, private sector participants and consumers
- Debt risk must be managed by the billing organisation (e.g. local authority) and potentially underwritten by the Government
- The system needs to be simple to ensure success

It is proposed that the biller will take the risk of default by end customers to allow the wholesale market to provide the best interest rate. An obligation on the householder to repay would be linked to the property over the 25 year period.

Further government underwriting of bad debt may be required but this would only be used in the event of non-payment by the householder, and would thus be a 'contingent liability', potentially sitting off-balance sheet. Further work is required to clarify this position.

The finance would sit within a 3rd Party Finance Vehicle which would initially be established as a public company, with subsequent encouragement of the market to establish further similar entities. The establishment cost for the 3rd party finance vehicle are estimated as several £ million.

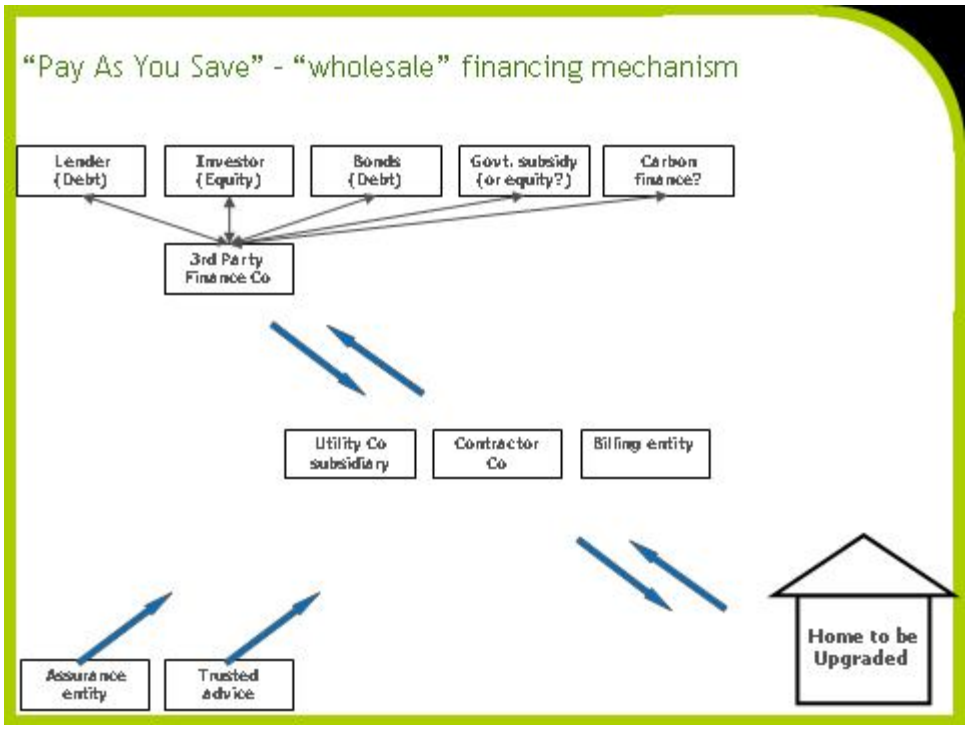
The 3rd Party Finance Vehicle would be highly regulated with controls on the money being spent and the returns. Three to four 3rd party finance companies would be encouraged to set up to avoid creating a monopoly over the raising and distribution of funds allocation. This is seen as a maximum number as more than this would be difficult /complex to regulate. The retail loan book would (ideally, but not necessarily need to) match the profile of the funds secured from financial markets.

This arrangement means that the majority of the funding would not sit on the Government's balance sheet. With Government under-writing / covenant on the small proportion of bad debt, an AAA credit rating is envisaged. With this level of securitisation the 3rd party finance company will issue 25 year loans at a commercial interest rate assumed to be approximately 6%.

4.3.3 Placing Finance

The 3rd party finance company would place the funds through agreements with the accredited PAYS provider responsible for carrying out the works on a project by project basis in order to manage the risks effectively.

Finance won't flow until PAYS charge agreement is signed, and therefore the cost of undertaking the initial low energy refurbishment survey work would be borne by the PAYS provider as a cost of sales and only recouped if the sale is secured.



4.3.4 Default risk

In seeking to minimise the cost of capital for PAYS the main variable is the default/non collection risk. This risk is best managed by the collector, in this case the local authority. By having the biller (local authority, see later) underwrite the default risk to the finance vehicle the economic incentive to manage the risk is placed in the optimum position with understood and trusted recovery methods. This will, if correctly structured allow an AAA credit rating (i.e. above the individual rating of any of the participants) thereby minimising funding costs. This may potentially require explicit support from government and from installers to achieve. This

underwriting may not necessarily appear on the local authority balance sheet and at worst may appear as a contingent liability (as a balance sheet note) if the underwriting equates to the likely default rate i.e. the local authority underwrites say 98.5% of the collectable amount and the underlying individual property values substantially exceed the charge liability.

4.3.5 Carbon Finance

An option for energy suppliers or other investors would be to provide finance directly into the 3rd party finance company in return for carbon savings from the scheme over 25 years either as an investment or as part of meeting a Supplier Obligation. This could be an alternative to direct carbon purchase of carbon savings through a CERT-type administration process at the project level, potentially reducing transaction costs.

4.4 PREFERRED CONTRACTUAL ARRANGEMENTS AND BILLING MODEL

4.4.1 Introduction to Local Authority Billing

Billing through the Local authority rather than an energy supplier is the preferred billing route for a range of reasons. Other options considered were: Using the Council Tax system, Householder contracts, Electricity bill, Gas bill, Water bill, Telecoms bill. The pros and cons of the different options are set out in section 8.

In brief, Local Authority billing offers a relatively simple way to link payments to the property rather than the individual consumer and whilst consumers change energy suppliers frequently, local authorities change rarely and in any event the responsibilities, liabilities etc. pass to the new so the practical result is there is no change. Local authorities tend to be viewed as 'trusted organisations' which adds a level of third party endorsement especially as they are not profit making. In addition, the proposed mechanism can be presented as a periodic payment obligation running with ownership of the property clearly differentiated from a personal loan and the PAYS Charge is not linked with a bill which is volatile and expected to rise significantly over time. Finally, a charge on a home is not uncommon so is less likely to be perceived as unusual by potential purchasers of properties.

With respect to payment default levels, these may be lower with a local authority billing route than through energy suppliers due to relatively high levels of trust between resident and local authority, lower administration costs in a not-for-profit organisation and potentially stronger powers / appetite to recover debt, especially if the mechanism can emulate some of the characteristics of the council tax collection and enforcement system.

There are also disadvantages. It is more immediately intuitive for an energy related cost to be included on an energy bill. Probably the most significant issue is that a proportion of householders have their council tax bill paid for them so, whilst they receive a bill, they are used to ignoring it.

There are also advantages with the energy billing route, particularly for certain sectors, so the choice is not clear cut. There would be merit in continuing the development of the electricity billing route before committing to a final decision.

4.4.2 How would it work?

Legislation to allow Local Land Charge - Local authorities must be enabled to create a PAYS Local Land Charge through new legislation to secure the payment obligation. The legislation should be drafted to allow for monthly payments over 25 years or for earlier repayment. The legislation could be drafted in such a way as to place the obligation to pay on someone other than the ultimate freehold owner such as the occupier from time to time, similar to the principles for payment of council tax.

Enforcement powers - A mechanism must be inserted in the legislation to deal with enforcement, e.g. a requirement to repay to be recoverable summarily as a civil debt (i.e. does not require lengthy proceedings but gives access to the court enforcement mechanisms). This must allow for robust enforcement, appropriately applied with a range of available collection routes, otherwise exposure to default will undermine PAYS by forcing up interest rates to cover the risk or expose the Local Authorities or Government to considerable costs.

Administration - The legislation could expressly provide that the local authority have the powers to administer the PAYS scheme. This will remove any doubt held by individual local authorities that the use of the well-being powers to administer the scheme is not possible. Local Authorities would authorise nationally accredited low energy refurbishment providers to utilise their billing services locally.

Applying the charge - The Local authority establishes a Local Land Charge for a PAYS property. A Local Land Charge attaches to the Property and not to the current owner. It does not appear on the title of the Property at the Land Registry. Instead, it is kept upon the Local Authority Register of Local Land Charges. Upon a conveyance of the Property the solicitor of the purchaser will undertake a Local Land Charges search and obtain a report from the local authority.

The Local Authority maintains schedule of payments to be made for each property and information on payments received. The Local Authority then uses the same billing process as Council Tax and either presents the PAYS amount clearly separated at the bottom of the Council Tax bill or on a separate piece of paper. Further work is necessary to determine the best approach.

For those that don't have to pay Council Tax particular effort will be necessary to ensure householders, at point of home purchase or rental, fully understand that the PAYS Charge is their responsibility, is not covered by housing benefit and, defaulting on payments would result in court action.

Data protection issues need to be addressed if data collected for the purpose of Council Tax billing is used to collect PAYS repayments.

The Local Authority may out-source the billing and debt recovery or use in-house resources and systems; if outsourced, then procurement rules must be addressed and service level agreements clearly established to maintain high levels of trust with the customer. Administration costs must be covered by the PAYS scheme to avoid introducing an additional burden for Councils that could divert resources from statutory obligations.

Managing defaults - A level of default risk will be carried by the Local authority and this would be factored into the interest rate charged. Agreement is required between the Government, Local Authority and 3rd Part Finance Vehicle on the detail as to how the default risks are ultimately borne.

Payment holidays - Whilst the detail has not been developed, there may be circumstances where a PAYS charge 'holiday' is appropriate within limits, such as during void periods in the rented sectors by agreement with the Local Authority. The repayment schedule would be adjusted to accommodate the capital repayment, interest and administration costs. See sections on Social and Private rented sectors.

Fuel Poverty - If the owner / occupier is unable to meet the periodic payments under the PAYS scheme (e.g. is fuel poor) they could agree with the local authority to reduce their periodic payments with the balance being rolled up to be repaid on sale of the property or at another agreed point. The lower payments could cover the interest and part of the capital cost only but the owner/occupier could still benefit from increased warmth from the works to the property. In order to protect itself, the local authority may wish to place a restriction on the title of the

property to prevent sale without its consent to ensure that the repayment takes place on sale. (see section 4.8).

Roll out and benefits - The scheme can be used by local authorities as a mechanism to address CO2 targets and obligations such as National Indicator 186 (per capita CO2 emissions)
After an initial piloting and set-up period, Local Authorities could be encouraged, and ultimately potentially required, to offer the PAYS scheme to ensure consistency of availability across the country.

4.5 FUTURE PROPERTY SALES

If homes with a higher level of energy performance attracted prices commensurate with the investment required then there would be significantly less need for a discussion about an alternative funding mechanism. In this circumstance, investment in measures could be financed in the knowledge that the next tenant (private rented) or prospective purchaser would pay for the enhanced 'low energy' benefit so recouping the investment made even if the originator moved out before the measures had 'paid for themselves'. However, 'cost' does not equal 'value' and hidden measures, such as insulation, have less impact on value than visible ones, such as double glazing.

Currently a more energy efficient home in the UK does not, typically, attract a premium in the minds of a prospective purchaser and, whilst this may change over time, there is currently little evidence of purchasers' preferences changing. In the context of the HESS target of 7 million whole house upgrades by 2020 then this represents a significant issue, hence the need for a system such as PAYS.

4.5.1 Principle

By attaching a charge on the home, which is less than the energy savings created, net financial outlay is marginally reduced. Comparing two homes identical in all respects except that one has a low energy upgrade and a PAYS charge, and the other is unimproved, both have similar outgoings. The improved property has both a benefit and a detriment so is not more valuable but, by an equal measure, provided these costs are understood, it would be inconsistent to argue that it is less valuable.
Valuation reflects consumer behaviour (i.e. the market) so if they perceive any ongoing cost as a negative they may reduce their offers. For PAYS to be successful, consumers will need to view the scheme as 'neutral' or at best 'beneficial' to their interests.

4.5.2 New legislation / how it could work

Conveyancing / searches - A local land charge is used to secure the obligation to repay the local authority the PAYS charge which does not appear on the title of the property at the land registry but is kept upon the Local Authority Register of Land Charges. The description of the land charge is relatively impersonal (see X and example in appendix B).

The land charge attaches to the property, and not the owner, and the local authority, as the biller, would hold the billing schedule.

Upon a conveyance of the property a solicitor of the purchaser would undertake a local land charges search and obtain the report from the local authority. This would indicate a PAYS charge was present and the billing schedule would be inspected. The legislation would be drafted such that the obligation to pay would fall on the owner/occupier from time to time meaning that the purchaser would not be responsible for any arrears (these would continue to be a matter between the vendor and the local authority).

Communications - The purchaser is only liable for the annual PAYS charge as it falls due and not the total. Critically, clear communication will be required to ensure the industry professionals, estate agents, valuers, solicitors and lenders understand that under the PAYS system the PAYS

charge is equal to or less than the anticipated energy bill reductions verses an unimproved property.

Clear information will also need to be provided to purchasers so they understand the PAYS charge, the low energy benefits, and also the obligation to pay. Key organisations to provide this information are Estate Agents and Solicitors as they tend to have the direct client relationships throughout a property purchase. This communication will also need to be supported by 'trusted' third parties.

Certification and warranties – A 'PAYS schedule of works' certificate (based on a 'whole house assessment') is passed from the previous owner to the new owner outlining the works that have been installed, their energy and carbon reduction benefits and the EPC rating pre and post PAYS.

The 'PAYS certificate of works' is updated when new low energy works are installed, or original measures are adapted and the impact on energy savings are calculated.

Behavioural Change - Clear documentation will be provided so the incoming homeowner knows how to set any controls, what to expect from a more energy efficient home and how to minimise consumption through the way they use the home.

Impact on value - Key points and conclusion

- The extent of the average PAYS based scheme is likely to result in an 'allowable' expenditure of under £10k (estimate figure – further analysis required)
- The PAYS Charge will be attached to the property in the similar way that Council Tax repayments are expected to be incurred
- Significant levels of education and awareness raising required for the public, property professionals, estate agents, valuation industry etc to avoid these misconceptions
- Where measures have a shorter life than the PAYS term (25 years), PAYS will factor this in to ensure each measure 'pays for itself' within its expected lifetime.
- That the finance element of PAYS is part of a wider package that promotes the take-up of low energy refurbishment.
- Low energy refurbishment providers using the PAYS financing scheme will be fully accredited, offer warranties and robust mechanisms to ensure that measures installed deliver the energy savings specified under usual circumstances – creating confidence.
- That appropriate insurance is in place to underwrite the work undertaken and advice given.
- That the council tax re-evaluation process at point of purchase takes into account both the 'value' the low energy upgrade and the PAYS charge. (possible legislation required)
- In which case, at levels of under £10k, PAYS is unlikely to have any significant negative impact on value.

On the assumption that the standards and accreditation process ensures that projected savings are less or equal to the PAYS charge, that the PAYS charge is not significant relative to the value of the property, it is attached to the property as a land charge and, there is a charging schedule which carries over from householder to householder on sale then, on a generalised basis, the effect on valuation is unlikely to be significantly impacted negatively or positively.

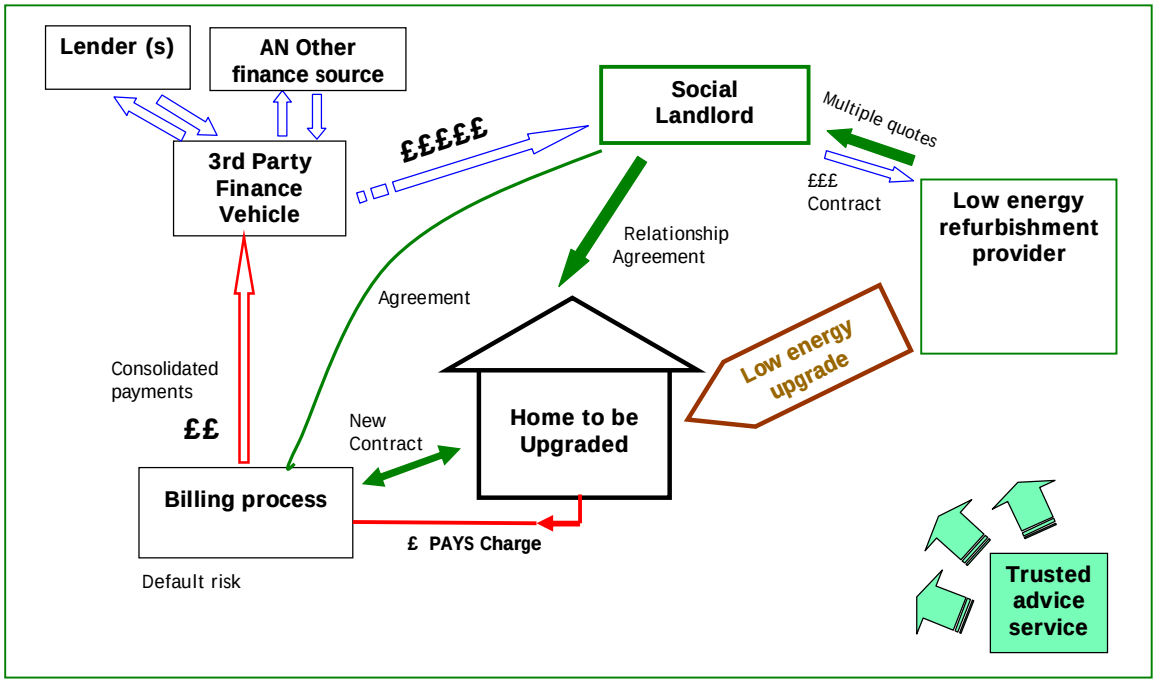
4.6 SOCIAL HOUSING

Whilst PAYS was originally conceived to finance the low energy refurbishments for the owner occupier sector the task group has specifically examined issues surrounding its implementation in the social housing sector (covering stock owned by local authorities, ALMOs and RSLs).

There are many issues for this sector which are covered in section 8.4 however one of the most significant is that the costs of energy efficiency work undertaken by Social Landlords typically cannot be recovered due to rent caps. This limits the number of properties that can be upgraded within a period due to capital constraints. Through PAYS a proportion of the costs can be passed on to the householder, whilst they still see a financial and comfort benefit. PAYS finance is not a panacea but it may help the limited finances spread further and therefore enable more homes to be improved in a shorter timeframe.

A full description of the issues and approach is contained within section 7.4.

The adaptations of the PAYS approach for Social Rented sector are summarised below.



- The social landlord would discuss with the sitting tenant the potential work and benefits seeking to integrate the low energy work with other work to be undertaken wherever possible.
- The properties would be surveyed and quotations for the work would be obtained from appropriate contractors.
- The quotations would detail the PAYS Charge and the anticipated savings for the energy bill payer(s).
- The tenant would have access to independent advice from the trusted 3rd party.
- Provided the tenant was in agreement then the work could be undertaken.
- In the case of the Council Billing route in particular, the tenant must be aware the PAYS Bill is their responsibility even if their Council Tax is paid for them.

To successfully introduce PAYS into the Social rented sector it will be important to engage with tenant organisations and tenants to understand what would work best and how to communicate

it. Learning's from this process should be shared as broadly as possible to minimise costs and maximise consistency.

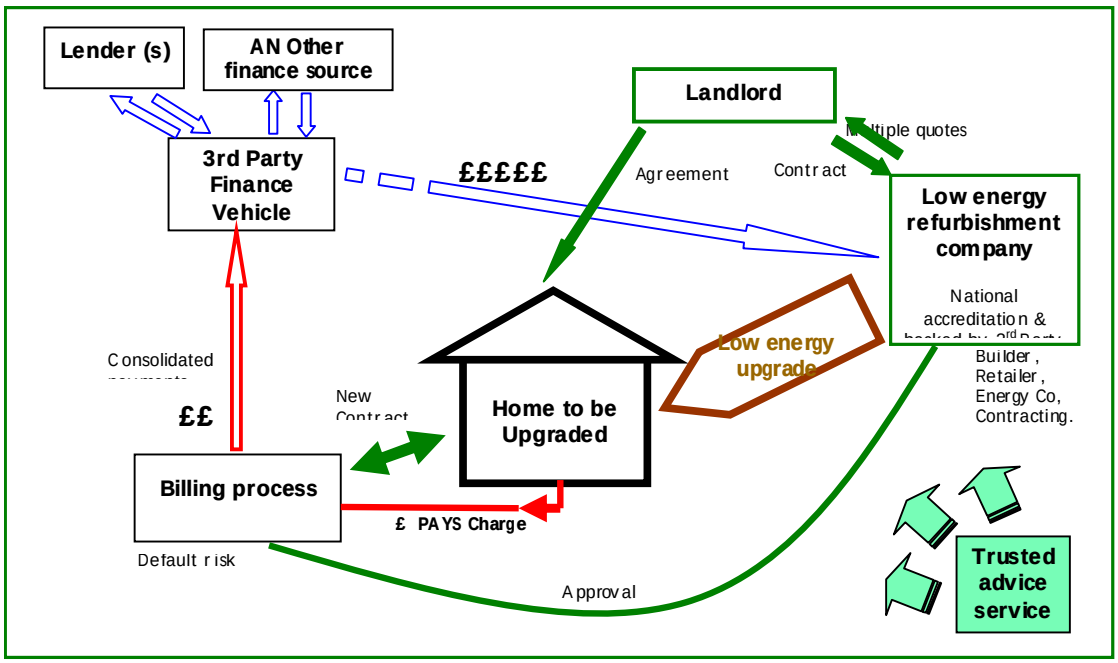
Prior to a formal pilot, a desk review of a sample RSL standard stock types and the associated energy efficiency measure 'packages of work' together with energy performance improvement, CO2 savings (for subsidy purposes) and costs is required. This would ascertain the range of properties appropriate for PAYS upgrades verses the level of Social landlord / Government contribution required to make the tenants financials an attractive proposition.

The output of the above review would indicate the types of stock that would offer the most beneficial starting point for refurbishment under a PAYS financing approach and the level of detail required for detailed discussions with tenants. Further factors to consider would be how widely letting agreements and legislation might allow the current service charge to be used for carrying the PAYS charge. If it were to be used as a vehicle for carrying the PAYS Charge, and the service charge is low, then the increase may appear significant. If the service charge is already high then overall service charge, when the PAYS Charge is added, may appear unreasonable. Again there is a strong desire expressed by RSL's to actively engage with the government in identifying appropriate pilots and working with tenants to develop the concept.

4.7 PRIVATE RENTED

PAYS was not originally conceived as a financing approach for the owner occupier sector. However, within the process of determining how a PAYS mechanism might be implemented, the opportunities for the Private Rented sector were considered. See section 7.5 for full details. The traditional barrier to improving energy efficiency within the private rented sector of the costs being incurred by the landlord and the benefits accrued by the tenant are addressed with a PAYS approach.

The adaptations of the PAYS approach for Private Rented sector are summarised below.



Subject to the particular tenancy agreements the process might follow along the lines of:

- The landlord would discuss with the sitting tenant the potential work and obtain the quotations from an accredited Low Energy Provider.
- The quotations would detail the scope of work, the PAYS Charge and the anticipated savings for the energy bill payer(s).
- The tenant would have access to independent advice from the trusted 3rd party.
- Provided both the landlord and the tenant were in agreement then the process would work in the same manner as the standard PAYS approach.

4.8 FUEL POVERTY

PAYS was not originally conceived as an approach to tackle fuel poverty. However, within the process of determining how a PAYS mechanism might be implemented, the implications for Fuel Poverty were considered together with any adaptations that might enable it to support some aspects of wider fuel poverty initiatives.

Where the householder is both fuel poor and asset poor then either a substantial subsidy would be required or some mechanism where part or all of the PAYS Charge was paid on behalf of the householder. Whilst not perfect this would allow the property to be upgraded with the resulting improved comfort and, at change of tenure, the new householder could pick up the PAYS charge as appropriate. This concept would need further development.

Where householders are using significant quantities of energy, and particularly where electrically heated (i.e. expensive), then a PAYS approach could provide a modest reduction in costs. If the

issue is heating levels are too low, due to fear of high bills for example, a PAYS mechanism in itself is not the answer. However, in both of these cases if the householder is fuel poor but also asset rich then there is the potential for a hybrid of a PAYS with a 'Kirklees re-charge scheme'[11] funding approach, in that there could be an opportunity for fuel poor residents to underpay the PAYS charge, with the agreement of the local authority, and then clear the outstanding amount, together with any additional interest, at future time at the point of sale of the property.

4.8.1 PAYS modification - Underpayment during tenure with arrears paid off upon sale - How would it work?

- The PAYS legislation (using the land charge) is written such that that an owner/occupier is only responsible for payments under the PAYS scheme during their period of ownership/occupation.
- The home owner would seek an agreement with the Council to underpay the PAYS Charge.
- The Council would agree not to take any enforcement action in relation to the unpaid balance until sale. A restriction is placed on the title to the property preventing a sale without the Council's consent.
- The legislation would be drafted to require the Land Registry to register the restriction on sale.
- If the dwelling was mortgaged then Mortgage Company would be notified - although this is unlikely to be an issue because in the case of default they would be able to sell and could ignore the restriction (known legally as "over-reaching").
- At point of sale the vendor's solicitors would clear the arrears and the council would discharge its restriction on the sale of the property.
- During the intervening period the householder would receive the benefits of low energy bills and increased comfort with a PAYS Charge set at an acceptable level.

4.8.2 PAYS fuel poverty conclusions

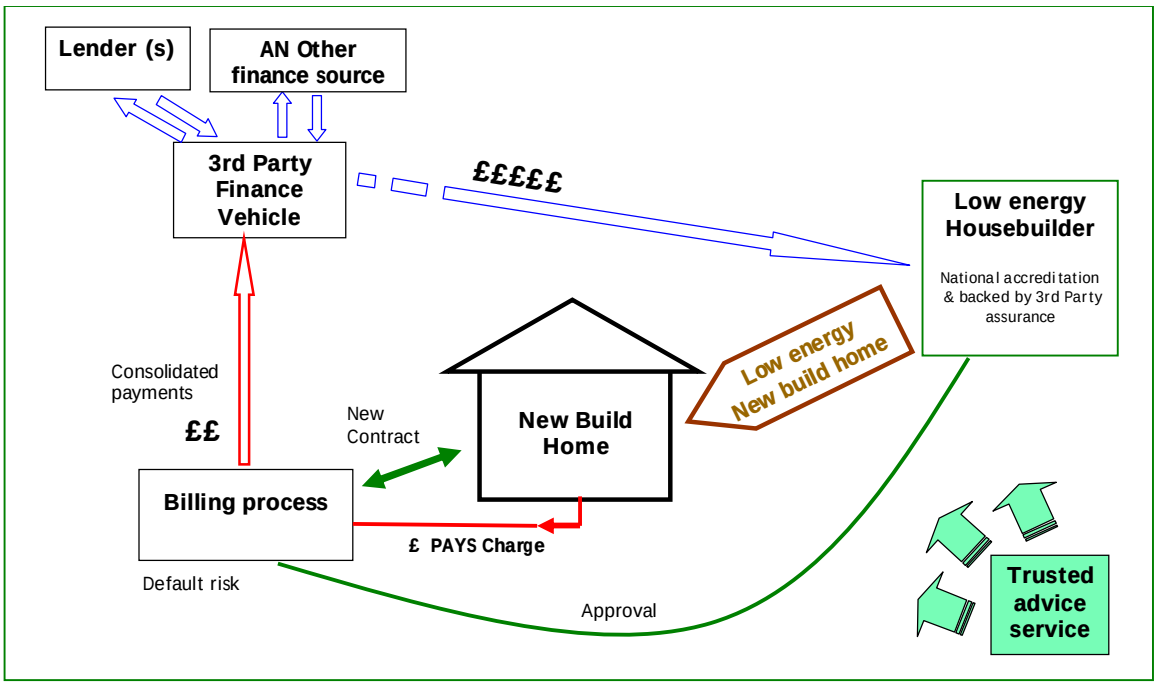
- PAYS is not a strong solution for alleviating fuel poverty although it may help in certain instances.
- Underpayment of PAYS, with the arrears paid off at sale, could be beneficial although this would require further development and significant householder testing.
- The Fuel Poverty perspective is that PAYS may be more effective at preventing people close to fuel poverty becoming fuel poor as energy prices rise – the PAYS Charge is fixed and the variable energy element is significantly reduced following low energy improvements.
- Indirectly PAYS may help by reducing the level of subsidy required to motivate 'able to pay' householders to undertake measures potentially allowing greater financial focus on fuel poor.
- Individual circumstances must be reflected in any assessment of current and projected fuel use otherwise models based on standard assumptions would be wrong (e.g. a fuel poor person might be using significantly less fuel for heating than standard assumptions would suggest) and therefore misleading regarding the size of any potential cost savings.
- The focus of PAYS is primarily on reducing bills and improving energy efficiency. However, for people who live with inadequate levels of warmth, due to prohibitive fuel costs or inability to generate sufficient heat, increasing levels of warmth is vital. Therefore, it may be desirable that fuel bills stay the same and comfort improves i.e. no cost saving is made. In such a case PAYS would not provide the answer.

[11] A scheme operated by Kirklees Local Authority for Solar hot water a predecessor of the scheme run by Sutton - see 8.9.7.1 South East London loans scheme

4.9 NEW BUILD

PAYS was not originally conceived as an approach to address the increased upfront cost of low energy new build homes. However, within the process of determining how a PAYS mechanism might be implemented, the opportunities for new build homes were considered. See section 7.7 for full details.

The adaptations of the PAYS approach described previously are summarised below.



How it could work for new build:

- The house builder seeks accreditation to offer the PAYS Finance from a national body. At a local level the billing process approves access to their PAYS billing system.
- A proportion of the difference between the projected energy bills and the 'stock' average energy bills, for the particular dwelling type, is allowed to be used as the PAYS Charge.
- The upfront capital this equates to, minus financing charges, would be calculated.
- The prospective homeowner is offered a reduction in upfront cost and the PAYS Charge schedule is provided.
- Any mortgage provider and valuer would be advised that a PAYS Charge is being considered for the property.
- If the householder proceeds with the purchase at the reduced upfront cost the house builder receives the PAYS capital from the third party finance vehicle on completion subject to receipt of a signed PAYS contract.
- The householder would pay the monthly PAYS Charge as per the schedule in the same way as for an upgraded existing home.
- At the point of re-sale the PAYS Charge would transfer in the same way as for existing homes.
- The PAYS Charge could be levied in conjunction with any Feed in Tariff credit to offset the amount paid.

5 PAYS Financial Illustrations

5.1 INTRODUCTION

To illustrate the householder's costs and savings and to provide a picture of the various factors that influence the PAYS financial proposition a range of illustrations have been developed. These show the effects of different energy price, interest rate, subsidy level assumptions across a range of property types and whole house upgrades. These illustrations are based on a mass scale industry where costs have been reduced through scale.

5.2 PROPERTIES MODELLED

Three different property types with different whole house packages of measures applied:

1) 3 Bed Semi detached property with solid walls
A package of measures including: Boiler controls, internal wall insulation, 100% low energy lighting, suspended wooden floor insulation. For full details see Appendix A.1

2) 3 Bed Semi detached property with solid walls
The same package of measures as above but external wall insulation (the predominate cost) For full details see Appendix A.1

3) 3 Bed Terraced property with solid walls
A package of measures including: internal wall insulation, 100% low energy lighting, reduced air leakage. For full details see Appendix A.1

4) Large detached 'Super home' with solid walls
A package of measures including: new high efficiency boiler, external / internal wall insulation, Solar hot water, 70% low energy lighting, For full details see Appendix A.1

5.3 ILLUSTRATIONS

5.3.1 PAYS charge period implications:

Consumer feedback suggests that shorter PAYS Charge periods are preferable, however, this increases the annual capital repayments. This illustration shows the implications for householder cost savings for various PAYS Charge periods.

Assumptions:

Property type	3 Bed semi-detached
Main heating	Gas
Low energy work package:	
	measures included: Boiler controls, external wall insulation, 100% low energy lighting, suspended wooden floor insulation. For full details see Appendix A.1
Energy Price:	
Starting price:	Quarter 4 2008 -20%
Annual inflation:	2.5% above the retail prices index (rpi) of 2.5%
Capital repayment escalator	3% per year
Subsidy level:	£50 / t CO2lifetime (equates to 300% higher subsidy than the average within CERT, a high subsidy is used to illustrate the range of cost / savings)
Householder contribution	£0
Interest rate	6.5%

PAYS Charge periods: 5, 10, 15, 20, 25, 30 years

Results summary:

PAYS Charge period (years)	PAYS Charge (average over period)	Householder net[12] annual 'saving' averaged over 5 years	Householder net annual 'saving' averaged over the full PAYS Charge period
5	£1,467	- £1,029	-
10	£915	- £363	- £366
15	£743	- £140	- £127
20	£593	- £31	£12
25	£555	£34	£127
30	£539	£77	£240

Conclusion:
The householder cost savings are very sensitive to the length of the PAYS Charge period. The PAYS Charge is required over an extended period in order to spread the capital repayments and reduce the annual outgoings. A period of 25 years seems to represent an optimum length of time and also has synergy with a typical mortgage term. Whilst this is at odds with the consumer research, which suggests that householders would favour PAYS Charge term of 15 years or less, the subsidy levels required to enable PAYS to work for shorter periods would be considerable.

5.3.2 PAYS Parameter sensitivities:

In order to illustrate the sensitivity to: energy price, interest rate, and subsidy level a PAYS model was constructed for the three property types described in 5.2. The cost, energy savings and whole house upgrade packages are indicative and intended to show broad relative impacts of these parameters.

Assumptions
The assumptions used were the same as 5.3.1 and the models are described in Appendix A.1. The PAYS Charge period used was 25 years and cost assumptions for each of the models were based on a combination of sources and a reduction factor applied of 20%.[13] The costs used assumed mass scale delivery by an established industry. All homes were based on Gas as the primary heating. The capital repayment element of the PAYS Charge increases by 3% per year (0.5% above the assumed RPI), but still below the assumed energy price inflation, to spread the benefit of the low energy measures more evenly across the PAYS Charge term. It was assumed that benefit was not taken though increased temperatures.

[12] Energy cost savings - PAYS Charge = net savings

[13] Report for DEFRA: BRE Delivering cost effective carbon measures to existing homes Sept 07, CERT Illustrative mix data, Solid Wall Supply Chain Review by Purple Market research (commissioned by EST and EEPfH, Industry costs, SAP 2006 output.

Results format

Each page covers one energy price scenario for a particular property. On the left hand side are a range of interest rates and subsidy levels. Selecting an interest rate and subsidy level the PAYS Charge for the property is shown (average of the first 5 years) together with the projected net savings over the first five years and the average annual saving over the whole PAYS period (see rectangle A: interest rate of 4% a subsidy of £40/TCO2 saved results in an average PAYS Charge for this property of £351 for the first five years and results in a net saving, after paying the PAYS Charge, for the first 5 years of £132 per year).

If the savings are negative this indicates that the savings are less than the costs. Depending on the package of upgrade measures, the subsidy level, interest rate and assumed fuel price a householder contribution may be required if the annual 'savings' are to be positive (see B below).

The subsidy level is expressed as £/TCO2 (lifetime) to be consistent with the governments CERT and other climate change programmes a conversion into subsidy per property is included in Appendix A.1. Typical interest rates are expected to be between 6.5 and 7.5%, rates less than this, suggests an additional subsidy from another source.

At the bottom of each sheet the fuel cost saving the year after the PAYS Charge expires is shown (see C below).

Energy price scenario: **EP 1**
Property: **3 Bed Semi**
Low energy package: **External Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£317	£167	£237
	£ 20	£0	£262	£222	£313
	£ 40	£0			
	£ 50	£0			
4.0%	£ 20	£0	£445	£38	£61
	£ 40	£0	£351	£132	£190
	£ 50	£0	£305	£179	£354
6.5%	£ 20	£0	£590	-£107	-£138
	£ 40	£0	£466	£17	£32
	£ 50	£0	£404	£79	£117
6.5%	£ 20	£3,000	£395	£90	£132
	£ 40	£2,000	£335	£148	£213
	£ 50	£0			

A

B

C

Householder net 'saving'pa after PAYS Charge removed £ 1,000

EP 1 Starting energy price based on Quarter 4 2008 -10% with and annual inflation assumed of 1.5% above the retail prices index (RPI) of 2.5%

Results
The summary results are contained in Appendix A.2 to A.4

Overview conclusions:

- For all house types and whole house low energy upgrades illustrated the PAYS approach could be successfully applied.
- The homes modelled were 'hard to treat' and a subsidy was required in most instances. A range of homes / low energy refurbishment combinations required relatively modest subsidy levels, marginally above the cost per tonne of CO2 under the governments CERT programme. Others needed a higher subsidy which might need to cover up to half of the cost of the works if there was to be no upfront householder contribution (for reference CERT subsidises typically between 50% and 100% of the costs).
- Homes not heated by gas would show even higher savings (circa £160 per year on a 3 bed semi) - not modelled.
- Some house types are inherently more cost effective to upgrade the energy efficiency so the level of subsidy necessary for these to show savings is lower.
- Within some sectors, social housing for example, higher householder financial benefit would be required (though a greater subsidy or some of the upfront cost paid by the landlord) although even in this case under PAYS the householder would be making a level of contribution to the cost of works.
- The PAYS illustrations developed were based on costs assuming economies of scale provided from established industries. Prior to 'scale up' costs are higher, particularly for some technologies, and this would require either a greater level of subsidy or a householder upfront contribution.

6.Key actions for delivery (on Government & key stakeholders)

What	Who
PAYS Implementation • Establish a high level government – private sector stakeholder steering group (**PAYS ISG**[14])	All stakeholders

Legislative changes
• Create enabling legislation to create a PAYS Local Land Charge as detailed in sections 4.4.2 and 8.7.4 including:
  • placing the obligation to pay on someone other than the ultimate freehold owner such as the occupier
  • allowing the charge to be paid monthly over 25 years
  • that an owner/occupier is only responsible for payments under the PAYS scheme during their period of ownership /occupation.
  • In the case of an agreed underpayment of PAYS Charge, Land Registry to register the restriction on sale.
  • Enacting appropriate enforcement powers
  • expressly provide that the local authority have the powers to administer the PAYS scheme.
• Further investigate the data protection, consumer credit and state aid issues potentially affecting PAYS
	Government, Local government, LGA
	
	PAYS ISG

Householder • PAYS pilot projects to understand the specific consumer engagement issues and to identify to whom the consumers will turn for advice. • Create value & demand for low energy homes • Encourage low energy installations in homes • Determine the potential and implications for Smart Meters providing PAYS measures performance feedback • Further investigate the proportion of households / market size of take-up for PAYS	Government, local Government, local stakeholders NGO's Government Government, Trade associations etc Government Government, building/ energy efficiency product retailers

[14] PAYS Implementation Steering Group

Delivery	
• Develop mechanisms for linking PAYS to trigger points	PAYS ISG
• Develop certification / accreditation process for products, systems and providers	PAYS ISG
• Establish subsidy process for low energy products and installations	Government
• Government/ local authorities/ agency to provide trusted advice to householders	Government, Local Authorities, EST
• Engage potential providers of the PAYS scheme, communicate its aims, the business opportunities and how to engage consumers.	PAYS ISG
• Agree energy modelling package, protocols and assumptions	PAYS ISG
Finance	
• Discussions with key potential investors	Government/ Treasury
• Consider Government approaches/ level to underwriting the PAYS finance	Government/ PAYS
• Upfront finance company establishment	Government
• Establish the regulatory structure for the 3rd party finance company	
• Develop the PAYS Charge system and relationship between the 3rd party finance company and local authorities/ delivery agents/ low energy refurbishment companies	PAYS ISG
• Develop the repayment relationship between local authorities and 3rd party finance company	Government, Local Authorities
• Identify the information requirements to sell the PAYS Charge – guidance or FSA	PAYS ISG
Billing	
• High level discussions with local authorities to consider appetite/ gearing up for delivery	Local authorities
• Discussions with local authorities to establish capability to undertake billing	Government, local government,
Future Sales	
• Education & awareness raising for the public, property professionals, estate agents, valuation industry	Government, RICS, EST, energy efficiency industry
• Ensure 'PAYS schedule of works' certificate is of a quality & simplicity to ensure consumer confidence	PAYS ISG
• Ensure that VOA council tax banding is not impacted by an improvement in energy efficiency where a charge is levied against the property	Government
• Set minimum standards for householder sales information	PAYS ISG

Implementing Pilot Schemes • Integrate PAYS pilots where appropriate within current and proposed green retrofitting pilot programmes. • Test key aspects of PAYS such as: o Marketing to consumers/ householders, what works / doesn't, their level of understanding and the level of advice provision required; o Householder feedback on different approaches to presenting the PAYS concept in a simple but accurate way. o The level of financial return (and therefore level of subsidy) needed to encourage different sectors of householders to take up low energy upgrades under PAYS; o Householder reactions to how the subsidy is presented – low or zero interest or a 'grant' lump sum or 'discount' o Householder feedback on 'whole house low energy refurbishment plans' content, presentation; o Householder feedback on PAYS schedule of works / costs, PAYS Charge schedule & projected energy savings; o How effectively trigger points are used; o Which low energy measures in practice require a householder (or landlord) contribution to make them eligible under PAYS (such that they cost less than they save); o Which measures are typically installed under PAYS; o How the financing scheme works in practice, particularly the relationship between the provider and customer for the PAYS charge; o Quality assurance approaches appropriate for refurbishments which ensure the energy performance expected is delivered by the products, systems and installation. o Home energy modelling (SAP) and any adaptations that may be required o Council / billing systems and processes, and how effectively participating councils manage to establish a billing system. o Whether an energy supplier billing model could be established which would meet the requirements in advance of a national mechanism. • Test/ identify the key ingredients for successful PAYS scheme in practice	Government, EST PAYS ISG

7 Implementing Pilot Schemes

Piloting the PAYS product will be an essential part of its further development and refinement. Pilot schemes will help to test the PAYS model and to provide greater illumination over the practicality of its key components. They will also provide greater detail on the challenges involved and flush out any further issues that the workshops have not identified.

Although pilot schemes will help test numerous aspects of how PAYS might perform, such as consumer reaction, and the energy efficiency industry's understanding, it will not be possible to consider the whole PAYS scheme in one go. Clearly the legislative and regulatory measures that are required for the effective operation of the PAYS scheme will take some time to implement and pilots will not be able to wait for these – indeed the pilots will help to illuminate the required regulatory & institutional framework for PAYS at a program level. In addition, the level of finance that needs to be raised for the pilots will of course be lower than the levels required for a national programme, and will need to be matched to the proposed scale of the pilot projects.

It needs to be recognised that the fundamental element of PAYS is the attachment to the property which survives change of householder at point of sale or tenant for rental properties. This enables spreading the capital costs over the long term and a 'neutral' valuation at point of sale. It is difficult to see how this fundamental element can be piloted in the freehold owner occupier sector without changes in legislation. If the presumption is that the charge will be discharged at change of tenure then this is equivalent to a Green Mortgage. For piloting purposes a close proxi may be in the Social rented sector where long term agreements for work can be undertaken and the PAYS Charge potentially added to the Service Charge. The same may apply to leasehold owner occupier properties. This is not to say that low energy Pilots in the private sector do not yield value, just that to refer to them as a PAYS scheme may cause confusion if the fundamentals are not present. The ability to attach the charge to the property in a way that is readily transferred at point of sale is a fundamental element.

In terms of linking a charge to the property, pilot schemes would be able to proceed in the short term through placing the charge on the title of the property rather than the land charge(as proposed in the PAYS delivery model and requiring legislative change to enable local authorities to do so). These types of charges would normally be paid off at point of sale or entered into the negotiation with the prospective purchaser.

In the absence of national standards and accreditation process, pilots should pay particular attention to ensuring that the low energy designs are robust, that the performance claims incorporate a sufficient safety margin and the quality of the installation is regularly monitored. These pilots could be used to trial different quality assurance approaches and gather data on actual v design performance.

There is a demonstrated appetite for PAYS low energy refurbishment pilots, and there has already been a great deal of interest put forward to the UK-GBC during the work of the task group. Government and its key delivery bodies can easily take advantage of this ready and willing interest in encouraging and facilitating small to medium scale pilots for PAYS.

There are currently a number of initiatives being led by national and local government as well as other organisations that are piloting environmental and low carbon retrofit particularly at the neighbourhood/ geographical level. Example programmes include the Energy Saving Trusts Green Neighbourhoods Initiative, Forum for the Future's Refit West scheme in the Bristol City Region, the Technology Strategy Board and regional initiatives such as the London housing retrofit scheme being developed by the London Development Agency. PAYS pilots could potentially form an extra element to pilot schemes proposed or established under these

programmes, and potentially could complement any proposed schemes by providing a source of (additional) finance.

Key aspects to test within a PAYS pilot would include:

- Marketing to consumers/ householders, what works / doesn't, their level of understanding and the level of advice provision required;
- Householder feedback on different approaches to presenting the PAYS concept in a simple but accurate way.
- The level of financial return (and therefore level of subsidy) needed to encourage different sectors of householders to take up low energy upgrades under PAYS;
- Householder reactions to how the subsidy is presented – low or zero interest or a 'grant' lump sum or 'discount'
- Householder feedback on 'whole house low energy refurbishment plans' content, presentation;
- Householder feedback on PAYS schedule of works / costs, PAYS Charge schedule & projected energy savings;
- How effectively trigger points are used;
- Which low energy measures in practice require a householder (or landlord) contribution to make them eligible under PAYS (such that they cost less than they save);
- Which measures are typically installed under PAYS;
- How the financing scheme works in practice, particularly the relationship between the provider and customer for the PAYS charge;
- Quality assurance approaches appropriate for refurbishments which ensure the energy performance expected is delivered by the products, systems and installation.
- Home energy modelling (SAP) and any adaptations that may be required
- Council / billing systems and processes, and how effectively participating councils manage to establish a billing system.
- Whether an energy supplier billing model could be established which would meet the requirements in advance of a national mechanism.

As with any effective pilot scheme, the PAYS pilots should strive to adopt the following criteria:

- Obtain high quality baseline data and data collection processes for monitoring of pilot;
- Be clear what elements of PAYS are being demonstrated and those which are not.
- Ensure involvement of all essential national and local delivery partners;
- Establish an effective and clear delivery body for the scheme;
- Develop a comprehensive marketing and engagement strategy.
- Efficient business plan and project manager/ management

With the PAYS concept developed in some detail during the course of this UKGBC Task Group it would be of significant value to test the model in comparison with other financing approaches to gauge householder reaction and inform further development and refinement. This would apply to all potential sectors: Owner occupier, Private rented, Social rented and Fuel Poor.

8 Alternatives, approaches and further considerations

8.1 INTRODUCTION

With many of the areas covered there are a number of potential approaches. In this section these alternatives are reviewed together with other considerations raised during the workshops.

This section covers the detail for:

Alternative approaches to raising Finance for PAYS

Alternative billing routes for pays

Future property sales

Social housing

Private rented

Fuel poverty

New Build

Householder offer

Delivery

8.2 ALTERNATIVE APPROACHES TO RAISING FINANCE FOR PAYS

8.2.1 Wholesale finance – the preferred solution

There are a range of alternative structures for sourcing finance for the 3rd party finance vehicle, with the wholesale finance approach identified as the preferred model.
The main benefits of the wholesale finance structure are:

- Likely to be most successful structure for raising funds;
- With Government under-writing / covenant, could achieve as close to AAA rating as possible;
- It can be kept off the Government's balance sheet whilst providing the benefit of public sector underwriting;
- It could decide to lend to a "mixed economy" of further loan providers described below; and,
- Increased Government control over where and how funds are allocated (if required).

The key challenges that the structure presents are:

- It would create a monopoly over the raising and distribution of funds allocation; and,
- It will need to be regulated by government.

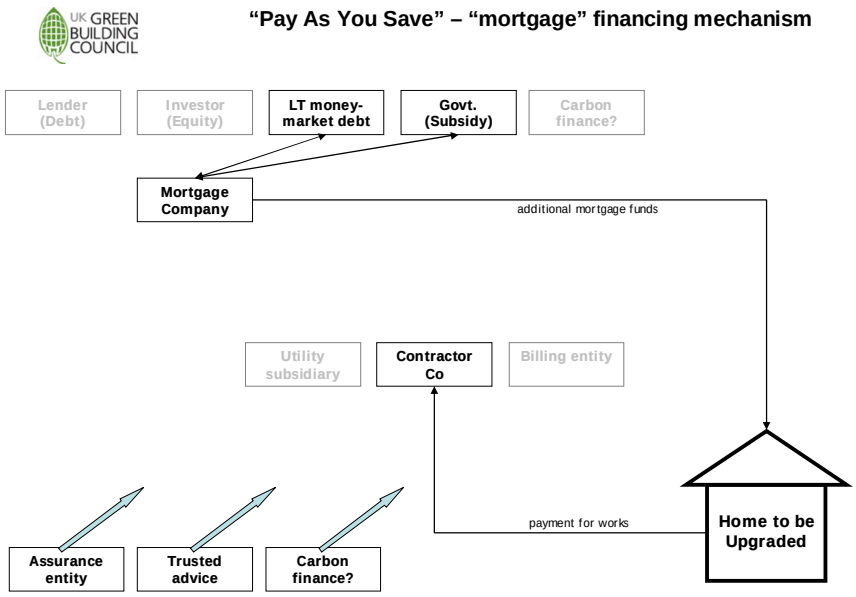
The finance workshop assessed the strengths and weaknesses of 5 other financing options, and there may well be potential for the inclusion of additional financing sources for the 3rd party finance vehicle. These alternative financing options are outlined below.

8.2.2 The mortgage product option

The mortgage option is not strictly speaking a financing variant for PAYS as it simply constitutes an additional mortgage product to specifically fund energy efficiency improvements, and would therefore be linked to the homeowner rather than the property. Although it provides upfront capital for low energy installations it fails to overcome the problem of householders failing to recoup their investment upon sale of the property. In addition, there is no reason why mortgage lenders can't provide this product in the current market place. It could constitute a financing

solution for energy carbon refurbishment in the face of mandatory requirements, or with significant incentives for energy efficiency or EPC improvements over time.

With mandated minimum standards, or incentives, mortgage lenders could be a good source of finance. In normal economic conditions, the mortgage loan market is worth £300-400bn / year, with 0.5m to 1.5m mortgages agreed. The additional funds required to meet the minimum standards would be available from the mortgage market. It could take 10-15 years for the majority of properties to cycle through this system. There is no reason why PAYS and a mortgage product could not both be available to consumers in the market place.



Strengths and weaknesses of the 'mortgage product' option

Pros:

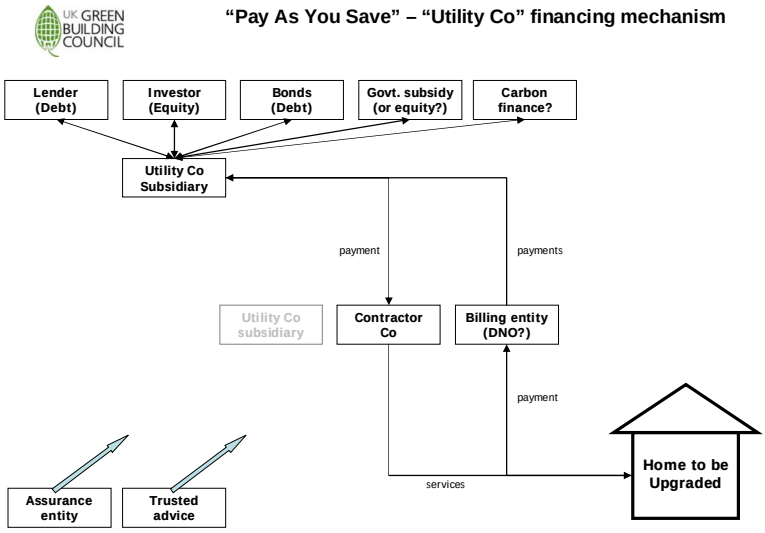
- Reasonably low cost of finance
- Mortgage company does not need to worry about repayment ability as long as LTV (Loan to Value) coverage is in place
- No billing or FSA issues
- Capacity: Finance in the quantities required will be available
- Simple structure using existing "financial infrastructure"
- Default rates on mortgages are low (compared to utility bills and council tax)
- Limited (if any) primary or secondary legislation required
- Lenders generally positive they could create and market a product

Cons:

- The householder is reliant on an increased valuation in order to recover the investment at point of sale if selling within the payback periods of the measures installed.
- Suggest that the valuation issue would only be resolved in the short term if under a mandatory energy performance improvement scheme
- Lenders might not be willing to lend near LTV boundaries (this could be where Government subsidy is targeted)
- EPCs are insufficiently robust to give house purchasers confidence to build that into their valuation of the property
- Does not rectify the problem of a landlord tenant split (because rents can't easily be adjusted to reflect additional loan repayments made by landlord)
- If rents can be changed, would there be sufficient information on individual home energy costs savings to adjust rent accordingly?

8.2.3 Several competing subsidiary funds (with private sector secured finance)

This financing structure would involve the establishment of several competing funds providing finance for PAYS, set-up as subsidiaries by a utility company, refurbishment contractors, technology providers or other private sector body. They might secure an equity investment from an Investment Bank, and utilise that equity alongside CERT or Government funding to leverage private sector capital (e.g. by issuing corporate bonds to pension funds or raising senior debt).



Strengths and weaknesses of the competing subsidiary funds model:

Pros:

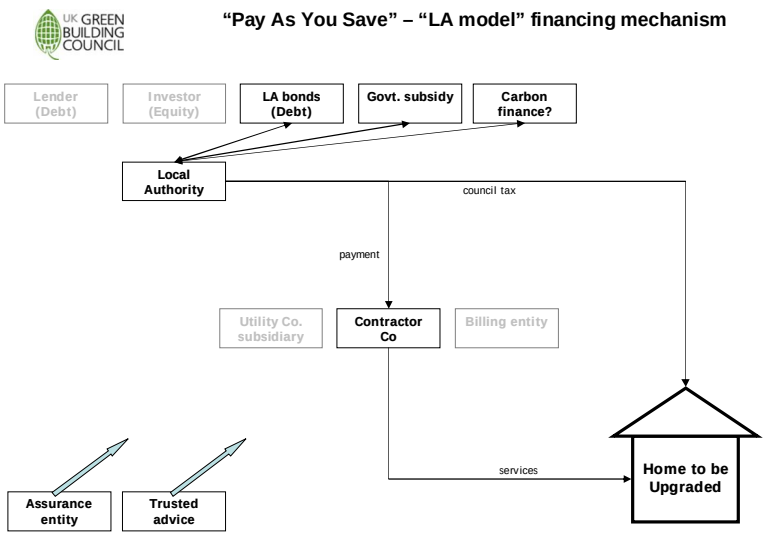
- Competitive tension created between multiple providers;
- Able to secure low interest corporate bond rates (BBB-A ratings);
- Capacity: Finance in the quantities required will be available;
- Could be structured with low/zero-coupon upfront, increasing over time;
- Utilities might consider doing this if they see consumer demand coming – they already have boiler maintenance companies that could be used as a starting point;
- Utilities already access the capital markets and are relatively sophisticated borrowers;
- Pension funds are looking for these investments (a 6-7% annual income return would be sufficient);
- Investment Banks would be interested in this type of equity investment;
- Opens access to a range of companies with balance sheets (e.g. Tesco Finance);
- Government subsidies & CERT funds could be channelled through each company, using these subsidies as an equity tranche to enable leverage of debt (Government guarantee).

Cons:

- Consumer confusion with multiple marketing messages;
- Higher cost of finance increases the cost per household;
- Increased risk of misleading sales techniques; and,
- Credibility will be critical in first months of operation.

8.2.4 Local authorities raise finance and administer local funds

This model involves the local authority raising finance from the markets over an appropriate time horizon to provide the capital for PAYS. Local authorities can raise finance through borrowing and would potentially be able to raise finance at AA rating which would enable the PAYS product to be provided to householders with a lower interest rate.



Strengths and weaknesses of the local authority financing model

Pros:

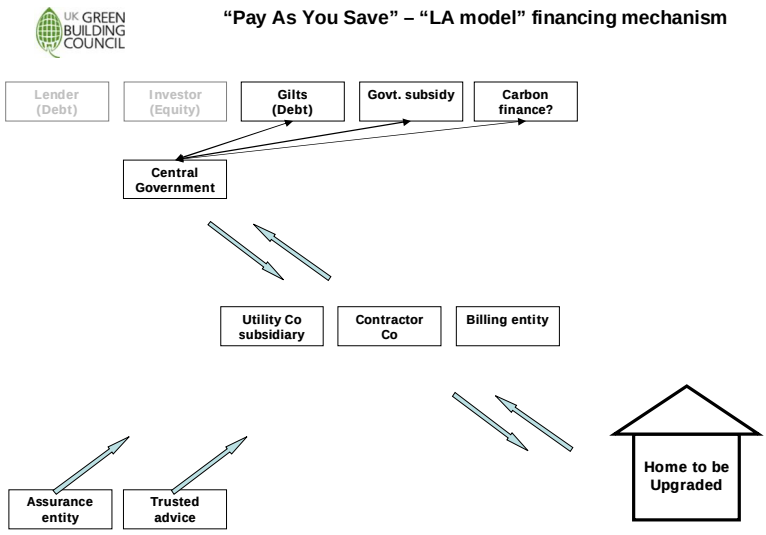
- Councils have a direct relationship with the house (through the council tax bill);
- They have a billing mechanism which would be the same as the funding / loan flow;
- They can raise finance at AA ratings (sometimes AAA, sometimes worse in exceptional cases);
- Some local authorities are already operating energy efficiency fund schemes;
- They already use the financial markets to raise finance [e.g. ALMOs];
- Some local authority linked organisations have structured equity release schemes. This requires central government funding in the short term, and allows the capital repayment to be made on the sale of the property.

Cons:

- There are hundreds of councils – implementation could be problematic / significant establishment risk;
- They may have to vary their operational remit ("*vires*");
- Capacity: Finance in the quantities required may increase the cost/interest rate.

8.2.5 Central Government raises finance and administers central fund

In this model the Government raises finance from the gilt market over an appropriate time horizon to establish a fund for the PAYS investments. This option was discounted because it would place the whole of the PAYS fund on the Government's balance sheet.



Strengths and weaknesses of the Government fund model

Pros:

- Government control;
- Government can raise finance at AAA rating;
- Simplicity by excluding private sector financiers.

Cons

- Finance raised is on HMG's balance sheet;
- Capacity: Finance in the quantities required may increase the cost/interest rate;
- Desire to integrate market-based approach into the solution

8.2.6 The "Mixed Economy" approach to establishing a PAYS fund

Rather than establish a specific PAYS funding pot, it is possible to create a solution to the refurbishment of the UK housing stock that draws on a range of financing sources, and therefore provides substantial flexibility in the raising of revenues for PAYS investments. It could involve sourcing finance from lenders, investors, bonds, Government subsidy, mortgage companies and local authorities. This "mixed economy" approach partially mirrors the way The Housing Finance Corporation (THFC) has developed its funding streams.

Strengths and weaknesses of the 'mixed economy' approach:

Pros:

- Avoids reliance on one central fund allocation body;
- Provides greater competitive stimulus.

Cons

- Might not have the ability to achieve scale;
- Customer confusion if the structure is too complex.

8.3 OBTAINING FINANCE FOR PAYS

8.3.1 Need to secure the lowest possible interest rate

As outlined in section 4, if the Government were able to bring down the cost of raising the amounts of finance required, this would enable the PAYS mechanism to include as wide a range of low energy measures as possible. A low interest rate on finance will reduce the subsidy required for higher cost low energy measures. Government underwriting of the finance raised on the supply side (from the wholesale financial markets) will counteract the levels of subsidy required at the demand (consumer) side.

8.3.2 Loan tenor and sourcing finance

At present, the financial markets are best able to access loan tenors in the range of 5-10 years and up to 15 years. However, there is demand from pension funds for investments that have longer term horizons, such as 25 years. Pension companies are actively looking for energy efficiency investment options, with discussions through the P8 Group and dialogue with the World Bank. The bulk of finance available today however, is considered to be in these shorter terms and this will need to be addressed in the consideration of the 25 year charge period proposed for PAYS. This is in order to spread payment for low energy measures over the longest possible period.

It may not be necessary to limit the investment vehicle to a single loan tenor. Indeed, it might make sense to match the wholesale loan book to the use of funds at the consumer level with a series of different payment profiles. The mix of the different works payback periods could be facilitated by or matched with the different tenors of wholesale financing. Escalating repayments, stepped repayment, repayment holidays or one-off lump-sum repayments could be added to the consumer offering as inducements, if this were to fit in with the PAYS charge linking to the property rather than the individual.
Over the longer term, it would be prudent to build in flexibility in access of funding sources so that the 3rd party financing company can raise money at the best possible interest rate.

8.4 ALTERNATIVE BILLING ROUTES FOR PAYS

8.4.1 Overview of alternative approaches to billing

There are three main potential billing options for the PAYS scheme and although the proposed PAYS model outlined in section 4 promotes the council billing route as the preferred option, the use of electricity supply companies as a billing route is also a very strong option. The main billing options discussed by the task group included:

- Local authorities:
  - Local authority billing PAYS as part of council tax
  - Local authority billing for PAYS separately to council tax billing

- Energy supply companies:
  - Energy supply companies billing the customer alongside the **electricity bill**
    Energy supply companies billing the customer alongside the **gas bill**

- Water companies

The strengths and weaknesses of each option are explored below.

The task group also discussed the wider issue of energy supply companies and local authorities taking responsibility for the full delivery of the PAYS scheme so as to consolidate the benefits of the management and billing of PAYS. These key options could include:

- Energy supply companies providing the whole contract with customers/ properties – a relationship that goes beyond billing the customer to also include responsibility for managing the whole PAYS contract and process (contracting installers etc)
- Local authority managing the whole PAYS service in addition to issuing the PAYS billing directly alongside its council tax invoicing
- Local authority managing the whole PAYS service in addition to issuing the PAYS billing separately to council tax invoicing.

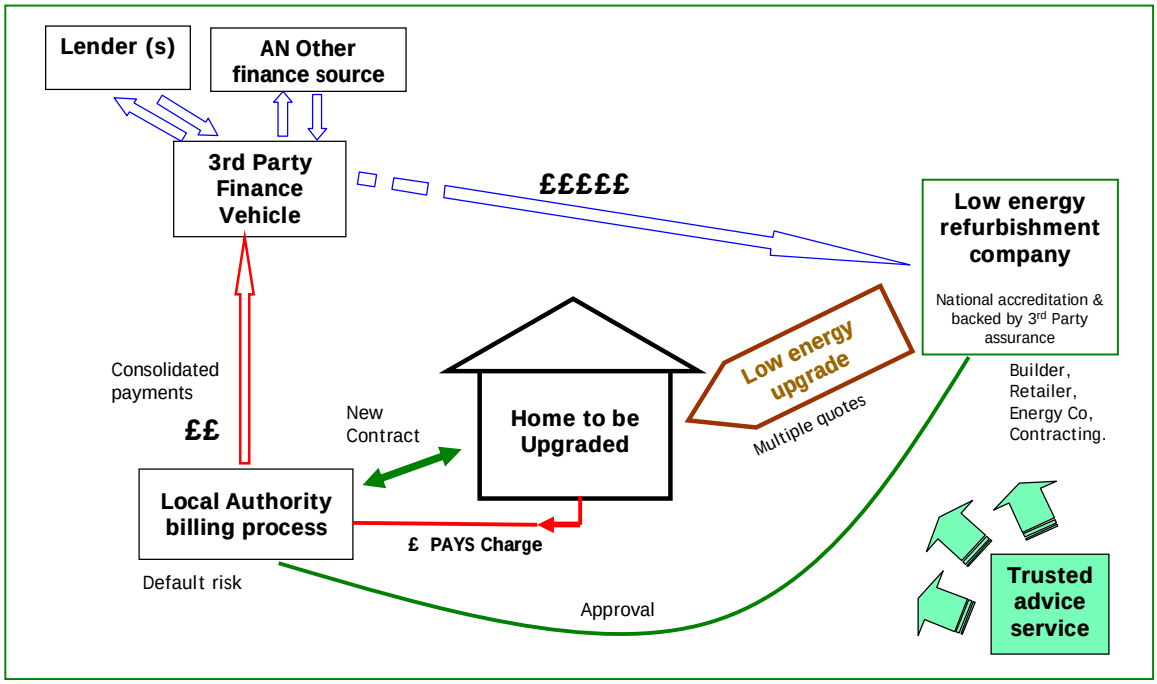
8.4.2 Local Authority billing – the preferred option

8.4.2.1 Introduction

The local authority group considered two main options: billing as part of council tax and billing separately to council tax. Early in the discussion it became clear that modifying the actual council tax process was fraught with difficulties and complications. Further the advantages that billing via council tax itself could be replicated within the legislation for necessary to bill separately so there were few advantages and many disadvantages of pursuing this route. As a consequence the meeting focused on the separate local authority billing route which is detailed below.

For details of the how the council billing would work see Section 4.

8.4.2.2 Local Authority Billing



8.4.2.3 Strengths and weaknesses of local Authority billing option

Pros and cons associated with councils undertaking the PAYS billing include:

Pros:

- There exist mechanisms for linking the PAYS charge to the property rather than the occupant (i.e. the council tax, Local land charge etc are linked to the property);
- Local authorities are generally trusted organisations especially as they are non-profit making
- Local authorities rarely change and if they do so the rights and responsibilities transfer to the new local authority automatically.
- Typically Councils have a low bill default rate
- Local Authority billing is a monthly process & established mechanism – and so fits well with the billing needs of PAYS;
- Would enable councils to undertake 'municipal innovation' in response to the climate change agenda and drivers such as NI186.
- Council tax bills, which the PAYS Charge would sit besides, are relatively stable, rising relatively slowly over time

Cons:

- Relies on voluntary council participation and therefore a 'postcode lottery' of who is eligible for PAYS;
- May lead to negative association of PAYS with tax (i.e. a tax being paid to a third party unrelated to the home/ energy efficiency benefits);
- Requires additional resource for councils to implement the PAYS billing;
- Council billing processes may struggle to cope with the demands;
    - Householders may expect the council to be responsible for resolving any problems with installations even if they're just undertaking the billing;
    - Loses link to savings in energy bill;

- May be issues with collecting payments from those who have their council tax paid for them and therefore assume a PAYS change not their responsibility.
- Local authority billing processes would need to be modified to accommodate the PAYS Charge schedule.

8.4.2.4 Legal considerations for local authority billing – Linking PAYS to the property

As outlined in section 4, the most effective mechanism for linking the PAYS charge to the property in order to enable local authority billing would be through establishing a local land charge. The various powers and responsibilities (housing, planning, local transport and powers to promote wellbeing) that relate to local authorities are set out in various statutes, stretching from the pivotal Local Government Act 1972 through to more modern legislation such as the Local Government Act 2000 and on to the present day. Anything undertaken by a local authority must be authorised by one or more of those powers. Failure to ensure that there are available powers will mean that any action will be ultra vires and void.

In the recent decision of Brent LBC v Risk Management Partners Limited (the LAML case) the Court of Appeal interpreted the wellbeing powers of local authorities less widely than expected and also held that incidental powers could not justify the establishment of an insurance mutual. This could call into question other innovative projects such as PAYS. However, the view of the legal task group was that being involved in/administering PAYS would probably come within the wellbeing power as the scheme would directly benefit the lives of those households that participated in it by increasing the thermal comfort of their homes and reducing their energy bills.

However, linking PAYS to the property is more problematic. The legal task group has identified that it is not possible for a local authority to create a Local Land Charge without legislation allowing it to do so. As such, if the scheme was administered under the local authorities' well being powers, the requirement to repay the local authority any monies advanced under the PAYS scheme can only be personal to the person taking the benefit of the scheme. In order to address the issue of passing on that obligation to pay on the sale of the property there are two potential options:

- the local authority taking out a standard charge (i.e. effectively a mortgage) on the title to the Property benefiting from the PAYS scheme (this has been discounted by the Consumer Task Group and the Future Sale Task group);
- the parties could enter into an agreement whereby it was agreed that, upon sale of the Property, the vendor would procure a Deed of Covenant to pay from the purchaser and the local authority would agree to release the vendor from liability to pay on receipt of the Deed of Covenant. This could potentially be protected by a restriction on the title which prevented sale without the consent of the local authority (in effect, a mechanism to ensure that the deed of covenant is obtained). Again, this route did not appear popular with the Core Task Group.

The Legal Task Group has looked further into Local Land Charges as a mechanism for delivering the PAYS scheme and attaching the liability to property. Our research indicates that there is no statutory definition of a Local Land Charge. Instead certain obligations and liabilities are designated by primary legislation to be Local Land Charges (in Appendix B are some examples taken from various statutes).

The result of the above is that, if it was intended that the obligation to repay the local authority was to be created as a Local Land Charge, primary legislation would be required to do that (with consequent amendments to the Local Land Charges Act 1975).

Having said that, Local Land Charges appear to have a number of advantages in the delivery of the PAYS scheme. First, a Local Land Charge does not appear on the title of the Property at the Land Registry. Instead, it is kept upon the Local Authority Register of Local Land Charges. Upon

a conveyance of the Property the solicitor of the purchaser will undertake a Local Land Charges search and obtain a report from the local authority. An example of a Local Land Charge search result is at Appendix B. It will be noted that the description of the Local Land Charges on the search result are all relatively impersonal. That appears to sit within the concept of the PAYS scheme.

Further, a Local Land Charge attaches to the Property and not to the current owner. That again appears to achieve another element of the concept of the PAYS scheme. As some Local Land Charges are placed upon the Property as a protection for a local authority in respect of costs it has incurred in default of the property owner (such as most of those under the Highways Act 1980 – see Appendix A.1) an incoming purchaser will often seek to have those satisfied on sale. However, there is no reason why that would be the case for an obligation to pay under a PAYS scheme.

A further important point to note is that, as legislation is required to create the Local Land Charge, the legislation could create the obligation to pay and the means of enforcement in a manner which could deliver some of the other concepts of the PAYS scheme. For example:

- The legislation can be drafted to allow for monthly payments over 25 years or for earlier repayment;
- the legislation could be drafted in a way to place the obligation to pay on someone other than the ultimate freehold owner. An example is the Local Land Charge created under the Building Act 1984 – see Appendix A. In this example a tenant may be required to repay but can deduct the payments from the rent. It is unlikely that this would be acceptable for the PAYS scheme but, if it was important that the tenant should make the payment under the PAYS scheme because it is the person paying the energy bills, then that could be drafted into the legislation;
- a mechanism could be inserted in the legislation to deal with enforcement. For example the requirement to repay under the Highways Act 1980 is stated to be recoverable summarily as a civil debt (i.e. does not require lengthy proceedings but gives access to the court enforcement mechanisms). Similarly the obligation under the Building Act is stated to be recoverable as a simple contract debt;
- Any legislation drafted to bring the PAYS Scheme into effect could also specify methods of enforcement for the Council. This could include the possibility of obtaining a liability order in the Magistrates Court similar to the process available for non-payment of Council tax or for a summary procedure in the County Court. Any enforcement method would need to ensure that payment under the PAYS scheme was according to an appropriate hierarchy.
- the legislation could expressly provide that the local authority had the powers to administer the PAYS scheme. This would remove any doubt held by individual local authorities that the use of the well-being powers to administer the scheme was not possible.

Our conclusion is that, in order to attach the obligation to pay under the PAYS scheme to the Property, a Local Land Charge is the best option. This will require legislation and, as such, the legislation could be drafted to deliver many of the other requirements under the scheme.

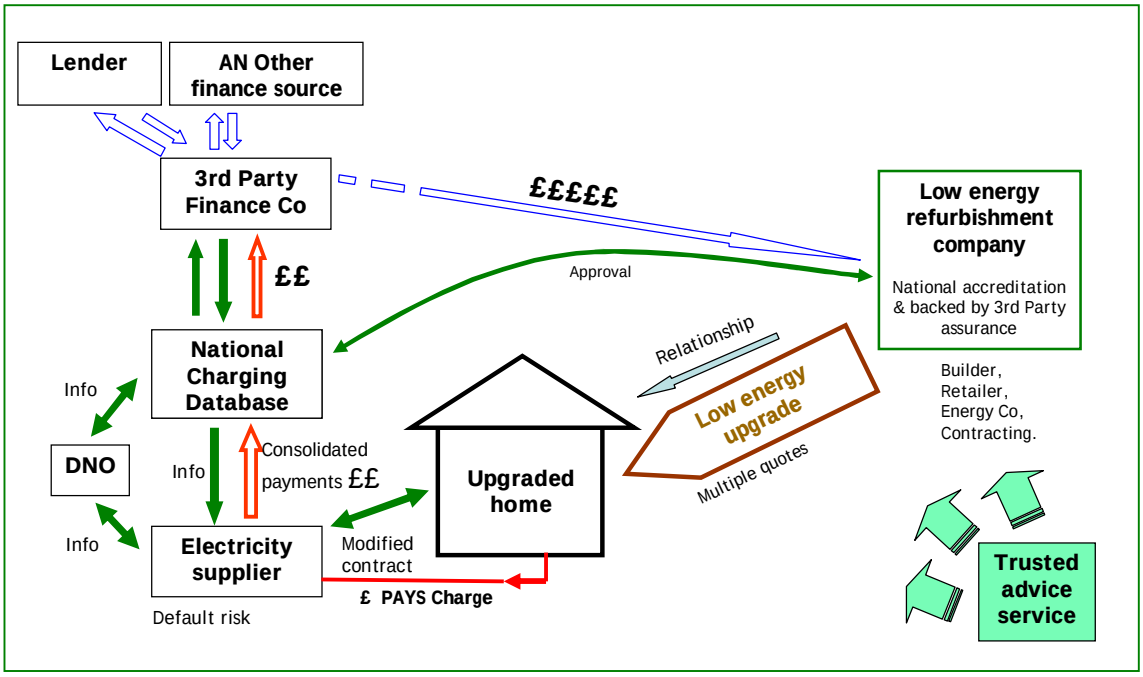
8.4.3 Electricity Billing

8.4.3.1 Overview

Billing through electricity suppliers is not the preferred route due to the difficulties posed by the frequent changes of supplier and therefore the implications this has for creating new organisational structures to hold historic data on payments.
Furthermore, evidence suggests that the general public has low levels of trust for the electricity supply industry, possibly limiting uptake of the scheme and increasing the risk of default. Non-payment of PAYS in this route is seen as a risk due to rising energy prices and the requirement to operate within a profit-making business.

The key advantages of this billing mechanism are the notional linking of PAYS to savings in the energy bill and the ability to create an incentive for payment collection by encouraging or obliging the supplier to buy CO2 savings as well as recovering PAYS repayment. The market reach is potentially great due to the high levels of the population that are connected to the electricity system.

8.4.3.2 How would it work?



Licensed electricity suppliers would be mandated to collect PAYS repayment in order to create level playing field in the market. A central charging database would be established to hold the repayment schedules for each PAYS household. DNOs would pay a role in holding PAYS property register for their area and would hold data on the MPAS system listing which properties have a PAYS charge. Upon change of ownership or electricity supplier, the DNO would notify the new electricity supply companies that a PAYS charge applies to the property. The new Smart Metering central communications agency could also potentially provide this function.

The PAYS charge would be listed on the same bill (the electricity bill) but shown explicitly as a separate item, with notional savings in some way illustrated for the customer. Electricity suppliers would be responsible for debt recovery on behalf of the 3rd party finance vehicle. The electricity supplier would apply the same criteria and procedures for dealing with vulnerable groups as they do presently. For customers on a pre-payment meter, the electricity suppliers cannot recover non-energy debt so need change to the system to allow PAYS to be collected.

Administrative costs and increased risks of default on main energy bill would need to be compensated through appropriate payment to the energy company:

- Priority of payment on energy bill will need to be agreed.
- Electricity supplier may need to be allowed to refuse customer to switch supplier if they have PAYS arrears
- Likely that there will need to be a level of government underrating to mitigate risk for electricity companies.

At point of sale no search currently undertaken by solicitors would reveal the PAYS Charge. This could be dealt with by way of a pre-contract enquiry to the vendor. Otherwise it could be dealt

with by being included on the EPC or requiring conveyancing solicitors to make a new search of, for example the DNO records or National Charging Database. This would incur an additional search cost for the purchaser.

Policy changes and incentives required:

- Central charging database to be established
- Incentivising energy suppliers to undertake this role
- Administration costs to be covered by the PAYS scheme
- Legislative changes to allow pre-payment meter to collect the PAYS Charge
- Legislative changes to allow deemed transfer of contact for the payment of the PAYS Charge to the new householder following a change of tenure (as currently happens with the energy supply)

8.4.3.3 Strengths and weaknesses of electricity supplier billing

Benefits and problems associated with the energy supplier providing the billing through the electricity bill include:

Pros:

- The energy supply companies already have relationships with all households through electricity supply, and have sophisticated billing systems. They could be adapted for billing for PAYS alongside the energy consumption billing.
- Almost all households have an electricity supply, as opposed to gas supply
- The PAYS charge can be linked to the property through the electricity MPAN, which is 'fixed' to the property and not the customer, and the DNO can keep a track on this.
- Links the PAYS charge to the reduction in the energy bill – i.e. the cost and the savings are in the same energy related space
- This provides a new business model for energy suppliers

Cons:

- The savings from PAYS will mainly register in the gas bill and not the electricity bill – hence the link with energy bill reductions is lost in the majority of cases and is potentially confusing for householders;
- Where gas provides the space heating yet the electricity bill is the billing route the electricity bill will rise significantly potentially the challenge that bills were promised to fall yet the electricity bill has risen – the distinction between the energy sources being overlooked.
- Electricity bills are set to rise for a range of reasons potentially giving the impression of a larger PAYS Charge.
- A new information / payment handling system at the central charging database would be required between the energy suppliers billing system and finance vehicle.
- Risk that the 'command to bill' could get lost between the DNO and the energy supplier, so that the PAYS billing is not transferred when householders change energy suppliers/ new owner moves in
- The large number of links/ information flows in the billing process increases risk of failures.
- DNO and central charging database will require payment for undertaking this service and will expect to make a reasonable profit.
- Risk of using "wrong" contract on change of electricity supplier.
- An additional search requirement for conveyancing solicitors
- For households heated by gas the electricity bill would increase. This is likely to increase the electricity suppliers overall default rates and therefore their costs and frequency of taking debt recovery action.

- Householder may be sceptical of a scheme billed through energy suppliers that reduces energy consumption – it is counter intuitive.
- Energy suppliers have limited debt recovery powers and expressed a reluctance to use them on recovering an energy efficiency charge.
- Billing on the energy bill may further complicate the process of providing alternative energy cost quotes when trying to win business from competitors.

8.4.3.4 Legal Considerations for Electricity Supplier billing

Current Billing Structure

- DNO currently bills charges for the use of the system to supplier (DUOS charges)
- For domestic customers this is done in the form of a super customer bill – the DNO will aggregate how many domestic MPANs are supplied by a supplier and send an overall bill for charges for the use of the system
- Supplier pays charges back to DNO – again as a total sum and not related to individual customer payment performance
- Supplier calculates usage for individual MPAN point (based on meter reads)and bills onwards to the customer based on individual tariff (which is calculated to include factors such as costs of electricity, charges for use of system etc)

Changes Required

DNO / Supplier Billing System / National Charging Database

- DNO billing system one way – Suppliers does not send individual billing info back to DNO – if DNO had role in collection or onward distribution of the PAYS Charge changes would be needed
- Current billing system from DNO to supplier does not include individual MPAN so PAYS Charge agreements cannot be currently passed this way
- Change of supplier complicates process – industry flows would need to be enhanced to show attached PAYS Charge and repayment periods
- Recognising the above, the conclusion was that a National Charging Database would be required to route payments from the householder via the energy supplier back to the appropriate finance vehicle, maintain PAYS Charge schedules and provide a central reference point for energy companies and Conveyancing enquiries. This could reside with the DNO's or Smart metering central communications agency or another body.

Other Considerations

- Non payment – supplier currently has powers of enforcement for non payment but these relate to energy supply and would not cover additional charges. Currently remedies such as disconnection would not be available
- Part payment of a bill which includes a PAYS Charge – if customer only makes part payment order of priority needs to be defined (e.g. supply over PAYS Charge)
- Customer would need to be informed at point of change of tenancy of PAYS Charge – DNO does not have current relationship with the customer only with the metering point.
- Changes to rules governing DNOs responsibilities to allow them to potentially provide some services wider than their existing powers if they become more actively involved via the National Charging Database or other mechanism.
- Energy suppliers terms and conditions need to be amended so that the deemed transfer if energy supply contract at a change of tenure includes the rights and obligations in relation to the PAYS Charge.
- New householder's terms and conditions to allow collection of the PAYS Charge
- Energy supplier's terms and conditions need to be amended to allow them to recover non-energy charges on pre-payment meters

Legal Changes Required Directly Related to Energy Industry

- DNO billing process regulated by DCUSA (Distribution Connection and Use of System Agreement)
- Supplier Licence
- MRA (meter registration agreement) which regulates industry flows between supplier and DNO relating to customer transfer
- Electricity Acts

8.4.4 Gas Billing

Following the review on electricity billing the alternative of using the gas bill was considered. This option was soon discounted as circa 7 million households do not have a gas supply. Whilst billing via gas would be possible, to cover all households legislation changes would be required in both the electricity supply and gas supply acts. On this basis further consideration was not pursued.

8.4.5 Billing the PAYS charge through Water Companies

8.4.5.1 Overview

Early in the discussion on water company billing it was apparent that the Government is planning to comprehensively change the policy and regulatory framework for the water industry to encourage greater competitiveness along similar lines to the structuring of the energy industry. These regulatory changes would remove the benefits of the potential simplicity of the water billing option compared to the complex arrangements needed for the energy billing option. Indeed establishing a billing mechanism for the PAYS Charge in an industry that subsequently undergoes considerable structural changes may be counter-productive and could lead to considerable disruption and complexity for all parties. In view of the proposed deregulation of the Water Supply industry this route for billing was discounted.

8.4.5.2 Strengths and weaknesses of billing through water companies

Pros:

- wide coverage of the majority of the population;
- an existing and accepted billing process directly to homeowners and occupiers;
- established resources as a business sector;
- industry experience of engaging and delivering efficiency programmes;
- Currently a far less complex regulatory and legislative environment than the energy industry which would simplify the arrangements and relationships required for establishing PAYS billing responsibilities;
- Potential to integrate/ link water saving measures with low energy refurbishment.

Cons:

- Proposed regulatory changes to introduce competition to the water supply industry injecting considerable complexity and uncertainty for PAYS billing.
- Likely to be a "hard sell" to persuade the water sector that this was an obvious area for them.
- water supply and energy efficiency of building stock do not have an obviously close relationship;
- they would not want any risk to their water related income;
- it may require a separate billing infrastructure.

8.4.5.3 Legal Considerations

For information the Legal Considerations for Water Company billing see Appendix C

8.4.5.4 Other comments

During discussions on water billing it was clear that when undertaking a low energy refurbishment this was also the opportunity to install water efficiency devices. The water companies have an obligation to reduce water use so are likely to support such an initiative in support of their own programmes. The major costs associated with saving water are the lead acquisition costs rather than the measure. Many water saving devises cost less than they save if incorporated in a whole house approach. As such, provided the property is on a water meter, then a PAYS financing approach may be appropriate for some measures.

8.5 FUTURE PROPERTY SALES

Assessing Impact on Property Sale of Energy Efficiency Improvements financed through PAYS

- Key issues central to PAYS discussed by this task group include:
    - Valuers reflect the market – they are not market makers
    - Valuation reflects consumer behaviour
    - Property choices for buyers are limited; the market (even when active) is highly imperfect lacking in homogeneity and therefore with few substitutes.
    - Purchase decisioning can be driven by other factors than comparison especially in a very active market where prices are rising and choices are limited.
    - Currently running costs have a lower focus in buyers' minds than upfront capital cost of property
    - Energy efficiency improvements tend to have a low focus perhaps because the common held view that the payback period is very long, and are often not visible.
    - Visible measures - especially those that contribute to improved comfort, such as double glazing and low energy lighting tend to have an impact on value more than 'hidden' measures such as insulation or a new boiler.

- Energy efficiency measures can have a positive impact on value, however:
    - Typically at a much lower uplift than the cost of the measures themselves and therefore the cost of the energy efficiency investment does not directly transfer into the value of the property.
    - If there was clear evidence of energy efficiency improvements increasing property value householders would undertake their own investment in the property with confidence that they would recoup their investment upon sale of the property
    - The principle of PAYS is that energy improvement measures should be principally funded out of commensurate energy bill savings.
    - Consumer behaviour and therefore over time property values could be changed through 'incentives' and 'education'. To achieve the rate of change envisaged legislative requirements will need to be toughened.

- Consumer perception of PAYS could be that it's a burden, a risk and therefore a cost on the property; this view may also impact on lenders decision process:
    - There is a risk that PAYS repayments linked to a property could make reduced offers from buyers more likely through customers interpreting them as an additional charge on the property, or even a debt that they are responsible for paying off without consideration of the reduction in energy costs/ discounting the benefit of reduced energy costs.
    - Risk that some of the measures could have a negative impact on the value of the property, e.g. internal wall insulation reducing the size of rooms within small terraced housing.
    - The perception of a negative effect on value might be accentuated by measures installed 'today' having to be replaced within the life of the PAYS Charge (e.g. boiler - 10 years)

Conclusion

1. A combined approach with alternatives linking certain energy improvement measures to the traditional mortgage loan & repayments to the property and the PAYS scheme providing a financing solution for energy efficiency measures which do not rely upon an increase in the property values.
2. A comprehensive energy based improvement scheme is likely to have some positive effect on capital values which lenders would be keen to recognise and provide additional finance; such measures are also likely to have an effect on running costs enabling a PAYS based arrangement to be introduced.
3. Property owners could choose a PAYS based scheme only.
4. Incentivisation of property owners could be linked to a PAYS based scheme.

Addressing Potential Negative Impact of PAYS on Property Value

- The extent of the average PAYS based scheme is likely to result in an 'allowable' expenditure of under £10k (estimate figure – further analysis required)
- The PAYS Charge will be attached to the property in the similar way that Council Tax repayments are expected to be incurred – at levels of under £10k it is unlikely to have any significant negative impact on value.
- Significant levels of education and awareness raising required for the public, property professionals, estate agents, valuation industry, lenders etc to avoid these misconceptions
- A system similar to leasehold payments – i.e. an annual revenue charge linked to the property to pay for its 'environmental performance' could be investigated further.
- Could the perception of the need for central heating & double glazing over the last 30 years (and it subsequent impact on house value) happen to energy performance standards?
- That the measures installed will breakdown or require expensive maintenance

Creating Consumer Demand for PAYS/ giving value to improved energy performance

- Measures to create consumer demand for improvements in energy performance will help to enhance the value allocated to PAYS properties
- Increasing the importance allocated to EPCs
- Stamp Duty differentiation / Potential Council Tax linkage to incentives

Impact on Buy-to Let Properties/ Market

- Different to owner occupier situation as the tenant reaps the benefit rather than landlord, and therefore there is no incentive for landlord to install measures
- Properties do shift between owner occupiers and buy to let owners. How PAYS operates for the buy to let market will need careful consideration to ensure that PAYS does not impact on a property's future sale.
- However, the landlord can pass the PAYS repayments onto tenant (as they reap the benefit of lower energy bill anyhow)
- May need to consider specific incentives/ policies for encouraging landlords to participate in PAYS…

Policy recommendations for minimising PAYS impact on property sale/ creating value for a PAYS Home

- Standards and accreditation are key requirements for PAYS to be successful. There is a need to ensure absolute confidence in the measures and their performance so that

purchasers are willing to take them on, including clear understanding of lifespan of measures and the repayment schedule. Similarly, that certainty will be required by those lenders or financiers making finds available for any PAYS scheme.

- Considering using stamp duty to reward homes with higher energy performance and create value for PAYS home
- Huge promotion of the PAYS scheme would be needed to the public, estate agents, mortgage lenders, valuers etc in order to manage misconceptions and ensure that a PAYS home is not perceived as a risk and a cost.

Further analysis needed to develop PAYS concept

- What is the range of likely PAYS investment costs and subsequent PAYS Charge repayments?
- What's the highest annual charge likely to be? (for assessment of consumer reaction to the charge)
- Would PAYS put off a buy-to-let purchaser?

Additional points

- That the council tax re-evaluation process at point of purchase doesn't 'value' the energy efficiency upgrade as there is also a PAYS charge attached to the property.
  Action – further discussion with appropriate government office is required
- Where a property already has a management charge or other charge the addition of a further PAYS charge may put off prospective purchasers
  Action – reinforces the need for a strong education and awareness programme
- If the problem of debt is not overcome, capital values may be reduced.
- Some assessment needs to be undertaken about the longevity of the scheme, as if homeowners believe that the improvements would add value, with or without compulsion, then homeowners are likely to fund themselves or through their own financing measures through existing lenders.

8.6 SOCIAL HOUSING

8.6.1 Characteristics

Whilst PAYS was originally conceived to finance the low energy refurbishments for the owner occupier sector the task group has specifically examined issues surrounding its implementation in the social housing sector (covering stock owned by local authorities, ALMOs and RSLs).

Whilst social housing stock is more energy efficient than the average following the decent homes programme it also houses those on the lowest incomes who are highly exposed to fuel price volatility. Fuel costs represent circa 40% of a typical rent and are not covered by housing benefit.

PAYS finance is not a panacea but it may help the limited finances spread further and therefore enable more homes to be improved in a shorter timeframe.

The social housing stock may be characterised as follows:

- Social sector accounts for 15 – 30% of fuel poor (depending on definition)
- 60% of social tenants do not pay council tax
- Fuel bills are typically equivalent to circa 40% of rent
- 16% of housing stock is in the social rented sector
- Average SAP of social housing is 57 (average SAP of private housing stock is 47)[15]
- Whilst many properties have been improved under the Decent Homes programme some remain which present an opportunity to integrate with PAYS over the next few years.
- Social tenants represent a high credit risk
- Many are on pre-payment meters and would want to continue as a budgeting method
- Some tenants are extremely reluctant to allow landlords to access their homes
- A high proportion of social tenants will be on qualifying benefits i.e. within the CERT 'Priority group'.
- Tenants are on low incomes so fuel rationing may make cost savings assumptions, based on a standardised model, inaccurate. A positive outcome may be increased warmth as well as reducing expenditure

Mechanism limitations

- It is assumed that any mechanism which impacts housing benefit will not be acceptable with the Government.
- Increasing rents is not an option due to legislative restrictions – rent cap

8.6.2 How the scheme could operate

Householder Demand

Householder demand for a PAYS approach is typically different in the social housing sector than the owner occupied sector as the landlord will generally lead capital investment whilst the benefits of the reduced energy use reside wholly with the tenant. This complicates the model presented for owner occupiers where the householder is generally responsible for both.

Rent caps effectively prevent the social landlord recovering any of the upfront investment through increasing rent which limits the number of properties that can be addressed this way within a period due to capital constraints. The next 5 years are expected to be particularly challenging due to nature of the rent formula. Without a new revenue stream social landlords are limited in their ability to raise additional capital to invest in their stock.

[15] English Home Condition Survey (EHCS) 2006 Annual Report

PAYS potentially offers a way for investment in capital works to be set against a PAYS charge. However, it is considered important that the requirement for a tenant to service a PAYS charge does not increase the benefit bill to the treasury. Fuel bills are not considered eligible rent for the purposes of housing benefit whereas service charges generally are. A PAYS charge would therefore need to be levied outside of the rent system or be treated like fuel.

Another distinction with social housing is that as many social housing units are in multi-occupancy blocks, it is envisaged that works will generally be initiated and procured by the social landlord. This poses challenges around acceptance of disruption and the contractual/charging arrangements.

Persuading an occupier to allow the work to go ahead must overcome perceived and actual inconvenience / disruption. Since the level of net annual cost savings under PAYS are expected to be modest, additional incentives are likely to be required to create mass scale demand and compensate for disruption that may be significant.

Furthermore, since the works are being commissioned by the social landlord, the PAYS Charge will either need to be applied under new legislation or under a contract between the social landlord and the tenant/leaseholder.

Clear explanations of the scheme and the benefits of increased energy efficiency will be required. Ideally this would be part of a wider engagement campaign which covered a range of tenant interests including general financial advice. To support this, the industry will need to develop and test common messages and marketing information. This will take resource, either through expanding Home Energy Advice, or training RSL staff. National tenant organisations need to be engaged with to inform this thinking, such as National Tenants Voice, and the Tenant Participation Advisory Service.

The roll out of smart meters may represent an opportunity to support the energy saving message and communicate energy savings.

Incentives

Incentives will be required to overcome disruption and provide significant tangible benefits to the householder. This is particularly important for the social housing sector where the Decent Homes Programme is already delivering some of the low cost carbon reductions and therefore PAYS may be focussed more on the higher cost measures (with correspondingly low net saving to the tenant). Worked examples in Section 5 of this report illustrate the typical savings that could be realised for a tenant in this sector.

In order for the financial benefits to be attractive, therefore, it is considered that PAYS may be best targeted at homes that have not already been refurbished under Decent Homes, where the overall benefit for the tenant will appear significant. In addition, longer payment terms on the PAYS charge schedule (>25 years) may allow greater net annual savings to be realised for the resident.

An additional incentive would be to attract additional financial support from energy companies through an enhanced Supplier Obligation with greater carbon reduction targets than required under CERT/CESP. In particular, this should support early adopters of the PAYS scheme to build confidence and understanding of how PAYS would work in this sector.

Pilot schemes should be established to determine what level of net cash savings would be enough to persuade tenants to take up PAYS.

Linking with other (more visible) work (such as redecoration or a new bathroom) that has more obvious benefits to the tenant provides an important opportunity to mitigate the disruption that is likely to be incurred. In addition this may also result in reduced overall costs due to reduced

overheads / marginal costs being incurred e.g. such as fitting internal wall insulation when the property is undergoing redecoration in any event.

To help mitigate against reluctance due to the inevitable disruption then potentially a voucher or a 'cash back' might be considered bringing some savings forward and more immediate although this would need to be considered carefully.

More radically, given that future DECC plans for a Renewable Heat Incentive and Feed In Tariff (to subsidise renewable energy generation) will be paid for by increasing energy bills, it could be considered whether it is appropriate for social tenants opting for PAYS to be exempt from these future additions to their bills. In practice this is seen as complicated and perhaps best managed through Supplier Obligation subsidies to priority groups.

Another idea floated is to enable some form of 'social tariff' or a 'cap' on bills, provided the tenant agrees to a) participate in a PAYS scheme refurbishment and b) live within some capped threshold of energy consumption.

Even with the above there will be tenants that still refuse to have this work undertaken. In particular, where dwellings have been sold through Right to Buy, either the owner-occupier or private rented sector landlord has rights as the leaseholder, which could be an obstacle to retrofit.

Either this is accommodated (and perhaps absorbed into the cost model) or consideration might be given to defining PAYS upgrades as 'essential works' at some point. In essence, this is seen as no different to the challenges of all social housing refurbishment programmes to be solved in a similar way.

Delivery

Change of tenancy

The PAYS Charge needs to be levied in such a way that future tenants are obliged to make the necessary payments without risking non-payment by tenants arguing that PAYS represents an increase in rent. It is considered that this is best achieved through a local authority Land Charge rather than a notification on the title of the property since the latter will generally represent a notice on the freehold or long leasehold title rather than short hold tenancy agreement and therefore necessitate a contractual arrangement to be put in place between the landlord and the tenant which is considered more likely to be challenged as an increase in rent.

Through a local land charge, if future tenants refuse to pay the PAYS Charge then they would be pursued through the courts by the local authority billing team. Billing is discussed further below.

Presentation of the benefits to future tenants is similar to the arrangements proposed for future property sale. However, complications may arise where investment is made on communal parts to the building where the benefits do not accrue evenly to all tenants. In such circumstances, it will be important to consider ensuring that the package of works will pay for itself for all tenants, either by equal amounts or on differentiated basis. Further work will be required to consider the best charging basis for multi-occupancy buildings.

Consideration of whether to target the fuel poor with PAYS is described in the Fuel Poverty section of this report.

Further Delivery Considerations

In principle, there will be PAYS opportunities across the majority of the social housing stock (local authority landlords and housing associations), which could lever in additional investment beyond planned programmes. This is particularly so for the local authority billing route where the PAYS Charge is applied as a Local Land Charge and does not sit on the title of the property.

A range of approaches which were identified in the workshops including:

- A programme of works, akin to Decent Homes
- Integrating energy efficiency measures into cyclical works and maintenance (use of trigger points)
- Upgrading void properties whilst they are empty
- Upgrading properties at the point of transaction, e.g. when a tenancy or a sale agreed
- The above options delivered by a contracted Energy Services Company (ESCO)

Each approach has merits and issues any PAYS scheme would need to be able to integrate with these.

Prioritisation may require a better knowledge of which properties to address and stock data records may need amending to incorporate the key indicators: energy efficiency performance, age, structure type, potentially a standardised property types and may also indicate if property is scheduled for disposal.

Social landlords already have the capacity to undertake small to large scale maintenance and upgrade works to housing stock either directly or via third parties, so expanding this capability is a matter of resource and attaining appropriate skills.

Irrespective of the delivery approach the Social landlord has the ongoing contact with the tenants so will inevitably be closely involved and this would involve resource at a time RSL's and Social housing groups are under financial pressure.

Finance

The finance mechanism for social housing under PAYS is essentially no different to the owner occupier sector, with large scale wholesale finance at low interest rates through government underwriting and robust debt management processes.

However, given that refurbishment works are led by major professional organisations (e.g. RSL, LA) there would appear to be additional opportunities to use a PAYS charge to lever investment directly from the LA (through prudential borrowing) or an RSL (through raising finance commercially on the open market. ESCO finance could also be an option, in return for the rights to receive the PAYS Charge payments as a part of a long term service agreement.

This would complement existing Government grant funding – such as the Decent Homes programme – and planned investments by social landlords as part of their stock maintenance and improvement programmes.

Subsidy schemes – such as the supplier obligation (CERT) effectively 'selling' the carbon saving to energy company would subsidise the upfront cost of the measures.

PAYS is not a panacea. The upfront cost of work in many cases, even when subsidies by the Supplier Obligation (CERT successor), will be too high for a charge on the property to cover the full cost whilst leaving sufficient 'saving' to the tenant to make it attractive. PAYS does have the potential for a proportion of the upfront capital cost to be recovered thus allowing RSL and Government spend to address more properties. Existing expenditure would go further if PAYS is levered into Social housing budgets.

With professional housing management in the social rented sector the most of the standard PAYS model are less important. The common factor is the legal process for attaching the PAYS charge to the dwelling and the billing process (unless the service charge is used and that would be unique to the Social housing provider). A range of finance sources and routes as indicated above

could be used with different social housing providers and even within an individual provider to meet the specific needs.

In the next six years RSL stock improvement activity will be restricted by rent revenue concerns due to the rental formula and they are unlikely to have any cash available. Whilst PAYS provides a mechanism for raising third party finance, in the social sector where reducing fuel based outgoings is an objective, then the cost of the work cannot be fully charged to the tenant and must be supported via a subsidy.

The Social Housing workshop expressed concern regarding the scheme administration and establishment costs if funded by RSLs.

Additional funding will be required if a substantial impact is to be made:

- direct spend on improvements
- on people resource to manage the programmes.

However PAYS would leverage this money to deliver more improvements than a direct grant process.

Billing

Views were mixed as for the best billing mechanism for the Social sector. Particular comments in addition to the general billing arguments were:

- Robust default recovery was important to ensure the PAYS Charge didn't fall into disrepute.
- The general issues associated with using the energy bill were no different to those listed in the main billing section of the report. Two specific comments were made. Firstly that there was prevalence of pre-payment meters complicated the energy billing route (and would require an additional legislative change) although smart metering may provide options. Secondly if the PAYS Charge was on the electricity bill and the saving was on the gas bill then the potential for default on the electricity bill increased markedly with a sector which had a poor credit record. This might result in greater use of upfront deposits / pre-payment to manage the default risk.
- A positive aspect suggested for billing through the energy bill was that energy companies could be required to improve the energy efficiency of the stock.
- Circa 60% of tenants have their Council tax is paid for them, so, whilst they receive a bill, it is not a demand for payment. By adding the PAYS Charge on to the council tax bill there was a significant chance of it being ignored.
- Service charge was an alternative that could be considered although this would be different to the mainstream PAYS process.
- The industry is currently very sensitive to defaults and pursuing payments, particularly in light of the ongoing case with L&Q, and the resulting potential that this RSL and others like it will be classified as a public body. This could count against the service charge billing route.
- The comment was made that transparency may increase the default rate

Whichever the billing system the tenant will need to agree to the new mechanism and understand the contract implications.

Although many tenants prefer to use pre-pay meters to help manage their household expenditure establishing a standing charge mechanism which could allow for seasonal variations in energy demand, and be designed to level the household outgoings over a year i.e. by charging more for PAYS in summer months than winter may be beneficial.

The preference considering all sectors was for the PAYS Charge to be via the local authority billing. This has a significant implication for the social sector. Either specific actions would need to be taken to ensure that the Council PAYS Charge bill was recognised as separate to council tax

and must be paid. If this was considered an insurmountable problem for this sector then an alternative, could be to bill the householder via the service charge instead (although legislative changes may be required to allow this). Not having a single system in itself may not be an issue and feedback suggests that billing via the service charge may be a more acceptable proposal. Further work needs to be undertaken to develop this alternative.

Voids

Circa 6% of properties are void at any one time. As with the private rented sector the ability to take a 'payment holiday' for a maximum period per annum would be beneficial to avoid the majority of these costs falling to the RSL.

8.6.3 Legislative change

Legislative change would be required to allow innovative recharging as considered in the main PAYS model.

Social Housing covers a broad spectrum of tenancy and leasehold arrangements which will need to be reviewed and a central government approach could undertake initial reviews and produce guidance to support RSLs on the specific legal issues relating to charging for PAYS.

8.6.4 Next steps and pilots and opportunities for early uptake

To successfully introduce PAYS into the Social rented sector it will be important to engage with tenant organisations and tenants to understand what would work best and how to communicate it. Learning's from this process should be shared as broadly as possible to minimise costs and maximise consistency.

Prior to a formal pilot, a desk review of a sample RSL standard stock types and the associated energy efficiency measure 'packages of work' together with energy performance improvement, CO2 savings (for subsidy purposes) and costs is required. This would ascertain the range of properties appropriate for PAYS upgrades verses the level of Social landlord / Government contribution required to make the tenants financials an attractive proposition. L&Q have already indicated that they would be willing to partake in this review.

The output of the above review would indicate the types of stock that would offer the most beneficial starting point for refurbishment under a PAYS financing approach and the level of detail required for detailed discussions with tenants. A further factor to consider would be the current service charge level if it were to be used as a vehicle for carrying the PAYS Charge. If the service charge is low then the increase would appear significant, too high and the overall service charge may appear unreasonable. Again there is a strong desire expressed by RSL's to actively engage with the government in identifying appropriate pilots and working with tenants to develop the concept.

Building on the above a range of pilots will be required to test aspects of the PAYS mechanism in Social housing. There are limitations within the private stock to the pilot scope as the legislation to attach a charge to a dwelling which is transferred routinely at the point of sale is needed. Within the Social sector a greater range of opportunities exist for entering into agreements with financial institutions. Regarding billing the tenant, for the pilots the service charge may provide the quickest route even if this is then transferred to the formal billing mechanism at a later date.

“Strawman” for a pilot:

- Determine the practical implications, issues and potential solutions to bill the tenant for the PAYS Charge via the ‘service charge’.
- Determine the availability and capability of ‘smart meters’ to provide energy reduction feedback to tenants
- Identify a small sample of suitable properties based on trigger points
- Survey, specify and cost the low energy work required
- Determine the PAYS proposition including
    - Financing terms
    - Forecast savings
    - PAYS Charge scheduling
    - Incentives for the tenants
    - Develop new tenancy agreement
- Develop the PAYS proposition in conjunction with prospective tenants
- Raise the necessary finance
- Undertake the work
- Monitor performance, note tenant reactions
- Consider lessons learned and disseminate

8.7 PRIVATE RENTED

Whilst PAYS was originally conceived to finance the low energy refurbishments for the owner occupier sector the PAYS mechanism was reviewed to identify the issues and opportunities surrounding its implementation in the private rented sector[16].

This section only considers the elements of PAYS that are unique to the Private Rented sector. For details of the full PAYS process see section 4.

8.7.1 Characteristics

An extract from the Energy Efficiency Partnership for Homes (EEPH) Private Rented Sector Summary:

> The private rented sector has some of the worst housing in the UK in terms of energy efficiency. Over 3 million homes across the UK are owned by private landlords. This represents a significant proportion of the UK's managed housing stock (20% in Scotland, 40% in England and Wales and over 50% in Northern Ireland), and accounts for over 10% of the total UK housing stock.
>
> There are significant clusters of private rented housing in major cities and university towns. Whilst the buoyant buy-to-let market in recent years has often focused on new build flats, much of the housing in the private rented sector is defined as "hard to treat", that is, it is not suited to mainstream energy efficiency measures and is therefore more difficult and expensive to improve.
>
> The nature of the stock is not the only challenge facing the private rented sector in improving its energy performance. Many landlords see energy efficiency as a cost to them, the benefits of which - a warmer home with lower fuel bills - accrue to their tenants. It is hard to recover their investment and unlike social rented sectors, there are not any strong Government regulations ensuring that improvements are made. There is therefore little incentive for landlords to install energy saving measures in their properties.
>
> Private landlords vary from large commercial organisations through to those with only one property that is rented out as a side line. This also adds to the difficulty of engaging private landlords on energy efficiency and fuel poverty issues.
>
> Trends affecting this sector include:
>
> - Increased regulation of private landlords with the introduction of HMO licensing and tenancy deposit protection as well as further fire safety legislation.
> - The new Housing Health and Safety Rating Scheme giving local authorities additional powers to demand improvements in private rented housing where a risk from excess cold is detected.
> - The Landlords Energy Saving Allowance (LESA) - a tax incentive for private landlords to install insulation has been introduced by the Treasury but awareness and uptake remains low.
> - Energy Performance Certificates (EPCs) were introduced for rented homes in October 2008.
> - There are a high number of 'hard-to-treat' homes in the sector that require attention.
> - Thermal comfort is a major factor within the definition of Decent Homes and local housing authorities have targets to achieve for the reduction of Non-Decent Homes in the private sector.
> - Grant schemes can seem bureaucratic to private landlords as they depend on the status of the tenant, rather than on individual properties.

The private rented sector could be characterised as follows[17]:

- Wide diversity of tenancy agreements and leaseholds
- Wide variety of landlords:

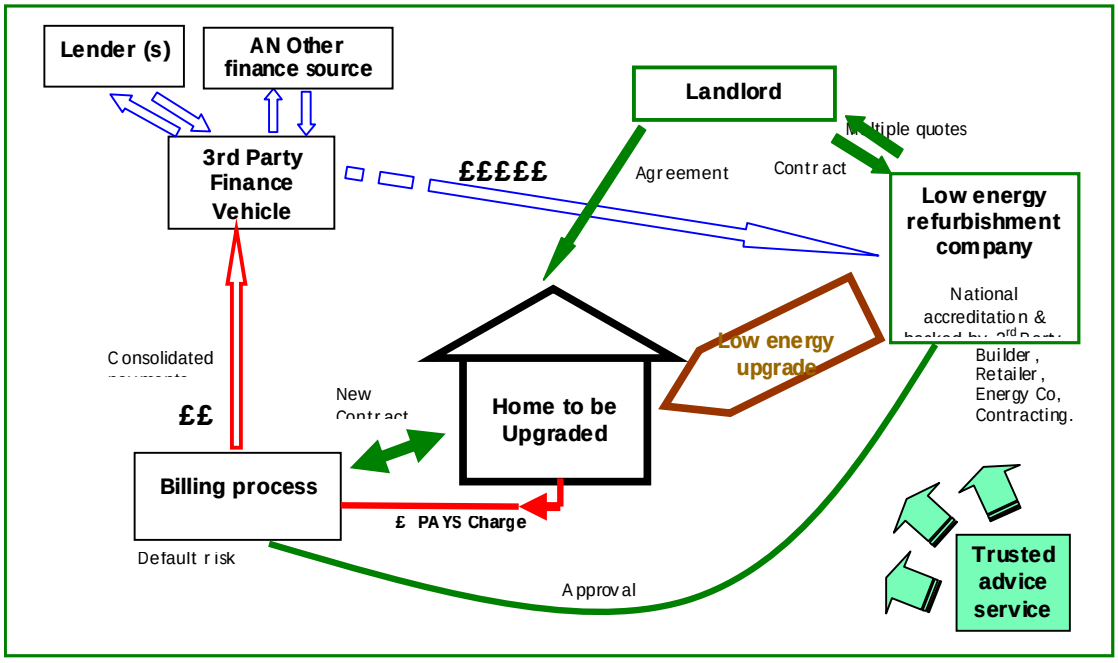
[16] Reviewed by the EEPH's Private Rented Sector Group
[17] Reducing the Carbon Impact of Private Rented Housing by the EEPH

- Circa 75% of privately let dwellings are owned by landlords as a sideline interest, with most private landlords owning between one and four properties;
- 25% of landlords have only one property
- 17% of private rented housing are let as a business
- 10% of private rented housing are let by institutions such as the Church, charities and government departments.

- Short term occupancy periods – 70% of tenants less than 3 years
- Significant geographical diversity in market performance and trends
- Freeholder / leaseholder split maintenance responsibilities
- Landlord - tenant incentive split for energy efficiency improvements
- Frequent marketing to potential tenants
- Void periods are common
- Complications of getting work done or even access in Multi-tenanted HMO properties
- Private rented homes represent 16% of the 'hard to treat' stock in England
- A recent survey for the EEPfH, 16% didn't have central heating, 85% of tenants were concerned at increasing domestic energy costs, 42% were very concerned, 9% of Tenants changed accommodation due to energy costs.[18]
- If a tenant moves out without paying the energy bill and 'disappears' then the energy company carries the default

Undertaking energy efficiency works at a cost to landlords and benefit to tenants has traditionally made this sector one of the hardest to improve the energy efficiency. A PAYS funding mechanism would allow a landlord to undertake the works with no upfront costs.

8.7.2 How the scheme could operate



Subject to the particular tenancy agreements the process might follow along the lines of:

- The landlord would discuss with the sitting tenant the potential work and obtain the quotations from an accredited Low Energy Provider.
- The quotations would detail the scope of work, the PAYS Charge and the anticipated savings for the energy bill payer(s).

[18] By the Oxford research agency for the Energy Efficiency Partnership for Homes May 2008 http://www.eeph.org.uk/uploads/documents/partnership/TORA%20Tenants%20Attitudes%20Presentation.ppt

- The tenant would have access to independent advice from the trusted 3rd party.
- Provided both the landlord and the tenant were in agreement then the process would work in the same manner as the standard PAYS approach detailed in section 4.

8.7.3 Landlords perspective

The prime decision maker to undertake low energy measures is, for a range of reasons, is the landlord. Not only do they own, or represent the owners of, the property a typical tenancy period is short with 70% of lets less than 3 years. Encouraging the landlord therefore becomes critical to the undertaking of energy efficiency measures in the private rented sector.

There are a range of policies introduced to drive improvement of energy efficiency within the Private rented stock including: The new Housing Health and Safety Rating Scheme (HHSRS), The Landlords Energy Saving Allowance (LESA) and Energy Performance Certificates (EPCs). Some are relatively new measures, however, as the private rented represents some of the least energy efficient housing this sector in particular needs to make particular progress.

A key area that PAYS addresses is the landlord - tenant split, where usually the landlord makes the investment and the tenant gets the benefit. The PAYS mechanism directly addresses this problem. The tenant gets both the benefit, in the form of lower bills, and the PAYS Charge. Whilst the landlord must agree for the work to be undertaken and, in all likelihood, would be actively engaged in the procurement of the work, they are not liable for the upfront cost of the low energy work. In essence the property is improved (low energy aspects only) at no cost to the landlord.

A survey[19] of Private rental tenants indicated that the 4th, 6th, 7th and 8th 'Relative importance of factors in choosing a rental property' were double glazing, fuel bills, insulation and warmth coming after location of property, central heating and monthly rental cost. So the opportunity to undertake improvements at no upfront cost could be highly attractive especially if trigger points are used when the property is 'improved' in a related way in any event.

Whilst is was not within the remit of the discussion to consider the relative merits of different incentive mechanisms the following were floated as potential options: Modified business tax / stamp duty / council tax and housing benefit paid directly to the landlord of energy efficient homes .

Where landlords hold a leasehold property the agreement of the freeholder would also need to be sought. Whilst this adds another decision point there is likely to be benefits to the freeholder who typically is responsible for the building structure and under PAYS the costs are carried by the tenant. Where the cost of the measures and the savings, even with subsidy, don't save more than they costs might particular complications arise as a contribution from the 'owner' might be required. Even in this scenario the fabric of the property is improved, and therefore the value, and other incentives listed above may make this approach attractive in comparison with the alternatives.

Homes of multiple occupancy (HMO's) are particularly challenging to address. PAYS would be no exception. Getting multiple tenants to agree to a PAYS Charge, even if it is in their interest to do so, is difficult although there may be some measures which are viable to undertake on a room by room basis.

Void's are common where the requirement to pay the PAYS's charge would fall back on the landlord. To minimise this effect and help prevent this becoming a barrier to action facility for a payment holiday for a period would be important. Whilst there wasn't any detailed discussion the feeling was to allow up to two month per year as a 'PAYS Charge holiday' should it be required.

[19] EEPH Private Tenants Research - http://www.eeph.org.uk/uploads/documents/partnership/TORA%20Tenants%20Attitudes%20Presentation.pdf

Finally different tenancy agreements may have different implications so ultimately application of PAYS would be on a case by case basis.

8.7.4 Tenant's perspective

For an existing tenant whilst there will be advantages in the form of lower bills and increased comfort there will be considerable disruption. As such, incentives such as: council tax (as indicated in the main PAYS proposal), 'cash back' or an initial 'PAYS Charge holiday' may be necessary to encourage uptake.

To ensure that sitting tenants are not 'mis-sold', the assessment of energy use would need to take into account occupancy type not just the standardised occupancy as covered in the section on Fuel Poverty.

Having access to a trusted 3rd party, such as a Local Authority and / or Energy Saving Trust will be particularly important to be assured that the PAYS mechanism is legitimate and the tenant benefits being and costs indicated are reasonable.

As the cost of work is being borne by the tenant rather than the landlord then there need to be assurance that the work undertaken is wholly linked with the low energy refurbishment rather than other works for which the landlord is responsible.

Although not unique to a PAYS financing approach statutory tenants, who represent a small and declining proportion of tenants (approximately 15%), may be particularly reluctant to allow upgrades to their property which could result in an increase in rental charges.

Prior to the work being undertaken there needs to be clarity for all parties as to whether there is to be an impact on rent.

8.7.5 Billing

In the situation where the tenant pays the energy bill (majority of cases) anecdotal comments suggest that energy bill defaults high higher within rented properties compared with owner occupied. Should a tenant move out without settling their bill this it is the responsibility of the energy company to pursue the tenant for payment Energy Recovery when tenant 'moves out'. As a consequence there is greater use of pre-payment meters and the use of energy 'deposits' to provide security. In this respect use of the electricity billing as the repayment route significantly increases the default problem for electricity utility as this bill will increase (70% of private rented are heated by gas in the survey quoted above) although the outstanding liability on Gas bills would reduce. The council billing route would likewise be exposed to a higher default risk.

Billing by way of the adding a PAYS charge to the bottom of the council tax bill is attractive to landlords, as council tax is largely paid by the tenant as part of the rental agreement.

8.7.6 Future Tenants

Future tenants would need to be made aware of the PAYS charge prior to agreeing to rent the property and the EPC may be one route for identify this.
To ensure that prospective tenants would not be put off by a PAYS Charge, clear information and market promotion would be required. Even then the PAYS Charge could be seen as additional so consideration of linking with the EPC to reinforce the connection between the PAYS Charge and the reduction in energy costs may be advantageous.

8.7.7 Opportunities for early uptake and pilots

The enabling legislation for PAYS described in the rest of the report is sufficient to allow uptake within the Private rented sector. As there is already enforcement action taken by Local

Authorities to improve the energy efficiency of homes through HHSRS there may be a ready route for rapid uptake and word of mouth dissemination supported by marketing.

Croydon Council are currently offering an energy efficiency 'loan' scheme for owner occupiers, and Southwark are developing a housing renewal programme. These are a few examples of council led initiatives to improve energy efficiency, and they represent a willingness and opportunity to establish either pilot schemes or to investigate aspects of PAYS or establish the demand for energy efficiency in an area.

One area that may be particularly open to early adoption is large company lets. At a corporate level, a professional letting investor, providing a green property for rent could be a significant differentiator. Using a council 'PAYS Charge' route or, in the interim via the existing service charges, could provide a very appealing mechanism to upgrade properties and extend budgets.

8.7.8 Conclusion

PAYS breaks down one of the biggest barriers to improvements of energy efficiency in the Private Rented sector by tackling the split incentives. The tenant gains through lower bills and improved comfort and the landlord gains through having an improved property.

Whist there are issues to be addressed and the sector has specific challenges, the PAYS financing mechanism could have an important role to play. To develop the proposition further specific private rented market research would be helpful to inform this sector particularly to identify how to present the PAYS Charge in relation to the lower energy use.

8.8 FUEL POVERTY

Whilst PAYS was originally conceived to finance the low energy refurbishments for the owner occupier sector the PAYS mechanism was reviewed to identify the issues and opportunities in relation to Fuel Poverty[20].

8.8.1 Sector Characteristics

- Fuel poor represent about 20% of householders.
- 66% of Fuel Poor live in 'hard to treat' homes (Solid wall, off gas, high rise, no loft)[21]
- Fuel poverty definition – using more than 10% of income on energy.
- Fuel poor could be in 'energy debt' and this may represent a high credit risk.
- A significant proportion of fuel poor are also asset rich.
- Many fuel poor are on pre-payment meters and may 'self disconnect'.
- Energy usage may be high or low (fuel rationing) therefore:
    - Standardised usage models could give an inaccurate forecast of potential savings
    - Increased warmth is an important outcome in many cases
- Only a proportion of fuel poor are within the CERT 'Priority group' i.e. they are eligible for qualifying benefits.
- A £10 increase in average household bills increases the numbers of households in fuel poverty by circa 70,000 (Source CESP impact assessment).

8.8.2 General observations relevant to PAYS

- As fuel poor could be in 'energy debt' and this would represent a high credit risk so many of those in most need of a whole house energy efficiency upgrade could be excluded if a credit check was undertaken.
- Particular sectors of Fuel Poor especially older people and families with young children would need specific Advocacy to be effectively supported via a PAYS scheme and would need a 'one stop shop' approach.
- Reports show that recent moves from a 'grant' approach for supporting the Fuel Poor to low interest loans / equity release has reduced take up even when these schemes are offered by not for profit organisations.
- Low income households tend to be very wary of anything that looks like a loan and this therefore represents a major challenge as to how PAYS would be presented.
- PAYS should be able to support both single homes and community scale initiatives.
- Anecdotal evidence suggests that equity release schemes are viewed by some as 'using the families inheritance'
- Smart metering may represent an opportunity for PAYS energy billing as an alternative to pre-payment.
- PAYS will require a subsidy to enable the annual savings to exceed costs for most long payback measures. If this uses a Supplier obligation (CERT type scheme) then this cost is borne by all households and this impact fuel poverty as opposed to National Insurance or general taxation.
- Upgrading of communal areas using the scheme and the PAYS charge applied via the service charge.
- Ensuring the ability to undertake PAYS energy efficiency improvements concurrent with other improvements which need to take place within the home.
- PAYS would need strong consumer marketing and promotion by trusted sources to overcome natural scepticism.

[20] Reviewed by the EEPH's Fuel Poverty Group
[21] A study of Hard to Treat homes using the English House Condition Survey presentation by Adèle Chuck and John Riley, Housing Centre, BRE

8.8.3 Specific adaptation of PAYS

- Fuel poverty is an extremely complex problem with many aspects and PAYS is not a panacea. However, there may be adaptations to PAYS which help some aspects as part of wider fuel poverty initiatives.
- Where householders are using significant quantities of energy, and particularly where electrically heated (i.e. expensive), then a PAYS approach could provide a modest reduction in costs.
- Where the issue is that heating levels are too low, due to the fear of high bills for example, a PAYS mechanism in itself is not the answer.
- However, in both of these cases if the householder is fuel poor but also asset rich then there is the potential a hybrid of a PAYS with a 'Kirklees Re-charge scheme' funding approach. There could be an opportunity to underpay the PAYS charge, with the agreement of the local authority, and then clearing the outstanding amount together with any interest at future time at the point of sale of the property.
- Where the householder is both fuel poor and asset poor then either a substantial subsidy would be required or some mechanism where part or all of the PAYS Charge was paid for the householder. Whilst not perfect this would allow the property to be upgraded with the resulting improved comfort and at change of tenure the new householder could pick up the charge if appropriate. This concept would need further development.

8.8.4 Underpayment during tenure with arrears paid off upon sale

Legal considerations –

There are, in effect 2 ways of dealing with the ongoing payment obligations under PAYS upon sale so that arrears do not accrue to the purchaser and only the ongoing obligation to pay passes on sale. We have called these the "Conveyancing Method" and the "Legislation Method".

The Conveyancing Method relies upon the purchaser's solicitor picking up arrears at the point of sale by his own enquiries of the vendor. This is the normal way in which Local Land Charges are dealt with. For example a purchaser upon sale would normally insist upon the satisfaction of Local Land Charges which relate to the default of the Vendor (such as a failure to comply with a notice served by the council resulting in the Council carrying out the work and enforcing a Local Land Charge). In a similar way, for an ongoing payment, a purchaser's solicitor would normally find out from the vendor whether there were any arrears and request that those be satisfied upon sale.

The alternative to the above (the Legislation Method) is to write into the legislation that an owner/occupier is only responsible for payments under the PAYS scheme during their period of ownership/occupation. In this way a purchaser would not be concerned about whether his vendor had made the payments or not because the obligation to pay those would not pass to him (he would only be responsible for ongoing payments while he owns/occupies the property).

For those in fuel poverty it might be that they would wish to underpay on their monthly payments but to pay off the balance of the "arrears" upon sale. In order to do this the agreement of the Council would have to be sought. Both of the above methods would allow this to happen provided the owner of the property and the Council agreed (in other words the Council would agree not to take any enforcement action in relation to the unpaid balance until sale). To achieve this, the Conveyancing Method would rely upon the purchaser of the property ensuring that the balance was paid off to the Council on sale because, if it was not, the purchaser would become responsible for the arrears. In practice this would normally happen. The Legislation Method would avoid the need for this conveyancing procedure. However, the Legislation method would put the Council at risk of a sale taking place without its knowledge and the vendor disappearing without repaying the Council - this could only be prevented by placing some restriction on sale on the title to the property without the Council's consent.

It is relatively straightforward to place such a restriction if both the local authority and the registered proprietor of the house agree. There would be a small fee at the Land Registry. The Land Registry currently has discretion whether to register this but it could be written into the legislation to compel registration it in these circumstances. The mortgage company would be notified but this is unlikely to be an issue because if the home owner defaulted on their mortgage and they went into possession they would be able to sell and could ignore the restriction (known as over-reaching). As such, in these circumstances there is a small risk for the Council but not significant.

PAYS general observation - "Conveyancing Method" v "Legislation Method".

A general need is for the PAYS charge to be efficiently, and without fuss, to be passed from one owner or tenant to another so the principle of spreading the savings and costs over the 25 year period is maintained. To this end, 'passing arrears forward' through negotiation at the point of sale is undesirable. Therefore where it is agreed for underpayment, with the balance of arrears paid off upon sale, then the 'Legislation Method' coupled with a restriction placed on sale agreed by the local authority and the registered proprietor is preferred.

3rd Part Finance Vehicle implications

This has management and complexity implications for the financial institutions and normally a charge is levied as a result. Either this capability needs to be built into the financing model, together with PAYS charge holidays, or the payments could be met from another source such as the local authority itself and it is this that would be cleared at the point of sale.

Conclusion

Underpayment during tenure with arrears paid off upon sale is a concept that has some merit, integrates well with many aspects of the PAYS approach and appears relatively straight forward. However, the concept needs further development and consideration before a definitive statement could be made.

8.8.5 Conclusions – Energy Efficiency Partnership for Homes (EEPH) Fuel Poverty Strategy Group general reaction:

- PAYS is not a strong solution for alleviating fuel poverty although it may help in certain instances
- Underpayment of PAYS, with the arrears paid off at sale, could be beneficial although this would require further development and significant householder testing.
- The Fuel Poverty perspective that PAYS may be more effective at is preventing people close to fuel poverty becoming fuel poor as energy prices rise – the PAYS Charge is fixed and the variable energy element is significantly reduced following energy efficiency improvements.
- Indirectly PAYS may help by reducing the level of subsidy required to motivate 'able to pay' householders undertake measures potentially allowing greater financial focus on fuel poor.
- Individual circumstances must be reflected in any assessment of current and projected fuel use otherwise models based on standard assumptions would be wrong and therefore misleading regarding the size of any cost potential savings
- PAYS focus is primarily on reduced bills yet increased warmth is a vital outcome for Fuel poor in many cases.

8.9 NEW BUILD LOW ENERGY HOMES

Whilst PAYS was originally conceived to finance the low energy refurbishments of existing homes in the owner occupier sector the PAYS mechanism was reviewed to identify the issues and opportunities surrounding its application to funding some of the additional costs associated with new low energy homes.

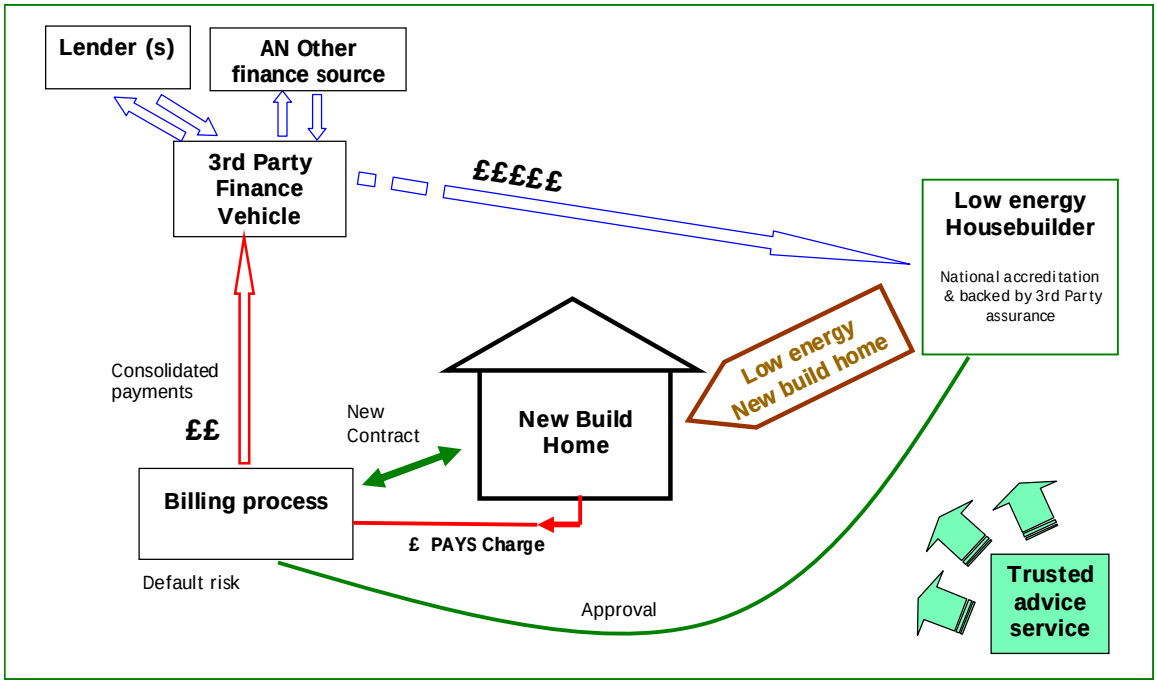
This section only considers the elements of PAYS that are unique to the part funding of low energy new build homes. For details of the full PAYS process see section 4.

8.9.1 Characteristics

The Low Energy New Build sector could be characterised as follows:

- Currently a very low build rate of low energy homes but this will increase over time with regulations coming into force in 2016 with Zero Carbon build rates increasing progressively through to mass scale circa 2020
- Low energy new homes will have a considerably lower energy running cost that the stock average
- Low energy new homes are more expensive to build, but an increase in upfront price is either not currently obtained or is not at a level commensurate with the additional build costs or the actual financial value of ongoing lower energy bills.
- The government has announced the introduction of 'feed in tariffs' (FIT) for onsite generated electricity and a 'Renewable heat incentive' (RHI) for heat which is available to New Build properties. The FIT is paid annually although the cost of the equipment to the house builder is borne 'up front'. As such the extent to which the FIT (or RHI) would assist house builders in meeting additional build costs would depend either on householders 'valuing' the benefit i.e. being able (and willing) to afford to pay a higher upfront price for a home with renewable generation qualifying for FIT or RHI or the ability of house builders to be able to access the income stream from the FIT or RHI in a suitable way (e.g. assignment by the householder).

8.9.2 How the scheme could operate



The process might follow along the lines of:

- The house builder seeks accreditation to offer the PAYS Finance from a national body. At a local level the billing process approves access to their PAYS billing system.
- A proportion of the difference between the projected energy bills and the 'sock' average energy bills, for the particular dwelling type, is allowed to be used as the PAYS Charge.
- The upfront capital this equates to minus financing charges would be calculated.
- The prospective homeowner is offered a reduction in upfront cost and the PAYS Charge schedule is provided.
- Any mortgage provider and Valuer would be advised that a PAYS Charge is being considered for the property.
- If the householder proceeds with the purchase at the reduced upfront cost the house builder receives the PAYS capital from the third party finance vehicle on completion subject to receipt of a signed PAYS contract.
- The householder would pay the monthly PAYS Charge as per the schedule in the same way as for an upgraded existing home.
- At the point of re-sale the PAYS Charge would transfer in the same way as for existing homes.
- The PAYS Charge could be levied in conjunction with any Feed in Tariff credit to offset the amount paid.

8.9.3 Further work required

- Further analysis and consumer testing is required to determine what a 'reasonable' PAYS Charge would be to a Householder and therefore the balance between reduced upfront price and ongoing costs.
- Further testing of this concept with respect to valuation issues may also be necessary
- Whilst it is critical for PAYS financing that the low energy home actually delivers low energy bills (subject to standardised occupancy) new build homes are built to a 'design performance' specified by building regulations. Design performance and actual performance are not necessarily the same. Until further work is undertaken on actual versus design performance a very conservative estimate of actual energy performance may be required to ensure false expectations are not set.

8.9.4 House builders perspective

Zero Carbon homes are more expensive to build than current new homes. Whilst this additional cost will fall somewhat over time, they are inherently more costly for a range of reasons and a cost differential will persist. There is little evidence to suggest that the additional benefits, including lower than average energy bills, will translate into 'value' as determined by prospective purchasers and expressed in a willingness to pay a significant premium on anything other than niche developments. As such, the supply chain and land value must absorb the additional cost. If the land price in particular is unable to absorb this additional cost (e.g. the land owner is unwilling to sell at such a price) or the value of the land is too low (e.g. as previously developed land) so it becomes negative when all the build costs are applied, then the development will not proceed. If there was a mechanism that enabled the prospective householder to obtain the benefit of a low energy home 'up front', as a lower price, rather than the benefit being 'spread over time' through lower bills then this would be attractive.

Further views expressed:

- For ease of commercial operation, PAYS is something that should either apply to a whole development or not rather than offering it on a dwelling by dwelling basis.

- That if PAYS was offered to existing homes it must be available to New Build otherwise this would cause a distortion of the market place.
- That PAYS could be structured to be counter seasonal to smooth repayments (PAYS Charge + Energy) across the year.

PAYS is not a panacea, the capital cost reduction potential, does not cover the full additional costs of a low energy home, however PAYS could make a very useful contribution to the whole.

8.9.5 New Home Prospective purchasers perspective

As expressed above, low energy homes 'should' command a premium as the ongoing running costs will be lower, however, at the current time this is not found to be the case except on niche developments.

For householder confidence, and to ensure that PAYS is not miss-sold, then it is critical that the performance assumed is delivered on average (i.e. under standardised conditions).

Concern was expressed that for leasehold properties where a service charge will be levied or where a ground rent is charged then the addition of a PAYS Charge may be seen negatively.

In many ways the issues for the first purchaser of a new home are similar to those identified by the future property sales group for the low energy refurbished exiting home (see section 8.4).

8.9.6 Billing

The billing process and implications are the same as those for the existing homes. Consideration may be given to linking the FIT or RHI payment, if one is applicable, so it is used directly to offset the PAYS Charge at source.

8.9.7 Future Sales

The process for future property sales is exactly the same as for the standard PAYS process.

8.9.8 Opportunities for early uptake and pilots

Provided appropriate controls are put into place to ensure that conservative assumptions are used for predicted energy use, in the absence of developed controls to ensure that the requisite level of performance is delivered, there may be opportunities for early uptake:

- within Social New Build were a service charge will be part of the tenancy agreement and a PAYS Charge could potentially be added
- possibly with development on Government owned land where a ground rent is possible.

Both of these would require further investigation to determine the potential.

In the absence of legislation to attach the PAYS Charge to the dwelling in such a way that it is transferred smoothly at change of tenure then it is difficult to see how a PAYS approach could be trial in private owner occupied new build.

8.9.9 Conclusion

PAYS offers a mechanism for mitigating some of the increased upfront cost of a new low energy home. Reaction from the house building industry and valuers was positive and they see considerable merit in the approach.

8.10 HOUSEHOLDER OFFER – ISSUES FOR CONSIDERATION

8.10.1 Connecting PAYS with low energy trigger points

As PAYS will be an important facilitating mechanism that allows individual home occupiers to afford low energy measures, it will be vital to effectively integrate the mechanism into the existing refurbishment and energy efficiency industries. Further incentives and policy mechanisms are needed in order to ensure low energy works are considered and sold alongside other home improvement works.

If PAYS low energy installations were to be provided only by a limited number of organisations then this would severely limit the potential for integrating PAYS within the refurbishment industry. Therefore, in order to facilitate the widest possible take up, the service needs to be offered by multiple providers. The provision of a one-stop-shop service that covers all aspects of PAYS delivery from initial survey work, to the low energy installations, access to finance and subsidies and workmanship guarantees and performance assurance can still delivered within this open access model through the market providing an integrated service. The PAYS mechanism must also work in such a way that it complements, and is able to be used alongside, established finance mechanisms for refurbishment work (e.g. home improvement loans for kitchen/bathroom).

To support occupiers following the installation of low energy measures, delivery bodies or scheme promoters will need to be trusted. There was concern that energy suppliers may not be seen as credible or trusted providers of low energy advice as it is counter intuitive to their current business model. However the link between energy savings and energy bills was seen as a way to provide clarity on the PAYS concept and the financial savings from low energy measures.

8.10.2 Incentives for encouraging take-up of PAYS

Mandatory targets
It was suggested by several groups that mandatory energy efficiency requirements would be the most direct driver to develop demand for low energy refurbishment, and it was anticipated that this would result in the necessary financing mechanisms and industry capacity being developed by the private sector, possibly without the need for PAYS. However, it was also discussed that whilst this would help address the market failure this is a significant political decision and only those that have access to capital would be able to respond. As such a range of financing mechanisms would still be required.

Grants
Low energy refurbishment could be financed through an enhanced grant system. However the sheer scale and cost of works mean that this level of subsidy, if socialised like CERT, could be deemed unacceptable. There was also a concern expressed about a pure grants system in the light of experience from the Low Carbon Buildings Programme where the number of applicants far exceeded the available grants, which may have had perverse consequences on take up (i.e. people who would have previously funded the work themselves, did not do so because they felt they had 'missed out' if they were not successful in their grant application.

PAYS plus an incentive
To achieve mass scale take up, it was felt that as well as a financial mechanism such as PAYS, other incentives would also be required. The key issue of perceived value of works was raised and whilst having work done to improve a kitchen or bathroom was deemed to present dual benefits in terms of improved day to day living standards, and a possible uplift in property value, neither of these benefits were currently presumed for energy efficiency works.
Incentives considered included linking the energy efficiency improvement to Stamp Duty or Council Tax, reduced VAT on the works, and other private sector offers, all possibly with a time limit to encourage early adoption.

8.10.3 Whole house and incremental steps

It was felt that providing a comprehensive whole house assessment would be imperative in order to achieve the greatest carbon and energy savings, and ensure that work carried out is done in the right way and the right order. However, it was also felt that many home owners would want to carry out the works over time, and this desire for flexibility should be accommodated by the PAYS mechanism, rather than insisting that all measures are installed at the same time.

8.10.4 Trusting the scheme

It was discussed that arguably, existing energy efficiency programmes undertaken by energy suppliers have still not fully overcome the perception that energy efficiency is counter intuitive to the core business model of such companies. Legislative drivers were seen as key to develop consumer acceptance of energy companies delivering efficiency measures. Furthermore it was considered that local authorities would be accepted as trusted bodies to deliver energy efficiency work.

The consumer behaviour group felt it was particularly important to ensure that PAYS is fully understood by householders. There is a risk that if the PAYS scheme is perceived as a loan for example, it would fundamentally undermine some of its core principles such as spreading the cost over various owners, and the net balance of the energy bill savings and the repayment costs. Therefore it was felt that the scheme needs to be presented as simply as possible to the householder.

8.10.5 Performance

The concept of 'guaranteeing' a reduction in energy bills was raised. A premise of the scheme is that the fuel bill savings are more than the cost of the PAYS Charge. It was felt that many people would find it hard to accept that the charge would be fixed but that the energy bill reductions would not be. This debate considered the overlap between other possible policies such as renewable energy tariffs which could provide further potential financial benefits. The benefit of reducing an energy bill subject to price fluctuations and replacing a proportion of the probable bill with a steady charge raised the concern that without education and advice the full benefits of the PAYS scheme might not be appreciated.

To achieve clarity the group recognised that linking energy savings into the household energy bill would be the preference from a consumer understanding perspective. However, if for legal reasons it is decided that the charge should be repaid through the council billing mechanism, the group were clear that a council charge mechanism would have to clearly distinguish the PAYS charge from council tax, which was perceived as a particularly sensitive public issue.

Since the proposed charging system is linked to the council, and thereby losing the direct link to energy bills, the consumer group felt it would be beneficial to implement smart metering systems to demonstrate the estimated performance improvements.

8.10.6 Defaults

There is a greater likelihood of defaults for energy bills than council tax. However it was assumed that a charge for energy efficiency would not be perceived in the same manner as council tax payments even if paid through a council process. This raised the issue of the methods of recourse against a home owner who did not make the repayments. Reducing the likelihood of defaults was seen as crucial to ensuring a low rate of borrowing for a large scale PAYS scheme, and hence a need for a robust default recourse process, clearly outlined to home owners, would be required.

8.10.7 Consumer research

There is still a distinct lack of research surrounding the interest and reaction of consumers to a finance mechanism such as PAYS. Nonetheless, there are a number of case studies across the country which have similar characteristics to PAYS and specific lessons can be drawn from these experiences. The task group agreed that the best approach would be to undertake Pilot schemes to test particular aspects of the proposed PAYS scheme, and that lessons from existing projects could help in structuring PAYS pilots (and the final PAYS scheme) most effectively.

8.10.7.1 EST / DECC Willingness to pay Research[22]

The research provides a number of useful insights in to consumer preferences towards different finance options in general and PAYS, which can help inform the development and design of the PAYS. Relevant points include:

Plus points – some consumers 'did the maths' and were attracted by always playing less than they were saving. Consumers were also attracted by the idea of using the billing systems and not having to set up and keep tabs on separate arrangements. Hassle is a big factor so anything which simplifies the experience of the consumer is welcomed.

Payback time preferences

Some consumers expressed a strong natural aversion to long-term repayment commitments. Repayment schedules beyond 15 years are typically viewed very negatively by a significant proportion of consumers. This was despite it being explained that under the arrangements for 'PAYS' the responsibility for repayment would be passed onto new occupants if they were to move. To some extent this could be put down to unfamiliarity with the concept of a repayment being attached to a property and the survey based part of the research which could not capture nuances of the concept. However, overcoming this instinctive aversion and the apparent complexity of this idea will be a key challenge in 'selling' this package to consumers.

Finance source

- Strong consumer objections to interest payments. Consumers are willing to enter into arrangements with commercial interest rates for products with high value to them such as a new car, home or kitchen. However, the perceived relatively small financial savings, long payback periods and perceived risk and hassle surrounding many low carbon technologies, means there is significant reluctance to paying interest on them (especially over a long period of time). There is also a strong moral objection to the prospect of paying interest for something which has wider social benefits. Interest rates, even at relatively low levels, will therefore work against the incentives for uptake. Our research suggests even a 2% interest rate could result in a 20% decline in uptake rate compared with a 0% option. Commercial rate loan at 7% would be relatively unattractive potentially resulting in a further 20% reduction.

-Trust in the source of finance. The source of finance is likely to have a significant effect on uptake rates. There are low levels of trust in energy suppliers and banks. The absence of a government role is likely to lead to consumer concerns of the motives of private lenders.

Perceived Risk

Uncertainty over the impact new measures may have on property values. The vast majority of consumers are unfamiliar with most high cost energy efficiency and renewable technologies. There is lack of confidence in 'unproven' and 'risky' technologies, and a concern that they will become a liability resulting in repayment costs being passed onto future occupants with few benefits.

Scepticism over the stated average savings from technologies. Many consumers believe their circumstances are not typical and are therefore wary of estimated averages. More personalised estimates taking into account individual circumstances may therefore help. However, as overall

[22] 'Energy Saving Trust (2009 forthcoming), Consumer willingness to pay for expensive low carbon technologies and the role of finance schemes and incentives.'

financial savings will depend to a large extent on energy using behaviours, weather conditions and fluctuating energy prices, providing guarantees over savings is unlikely to be possible. How to set and communicate expected savings will therefore be key. Confidence in performance of new technologies is also relevant here.

Incentives
The vast majority are unwilling to pay the sums of money we are talking about for efficiency and renewables, with or without access to upfront finance. Consumer preferences for different technologies vary significantly. Achieving significant uptake of SWI in will require particularly robust incentives. Strong incentives are needed. To get uptake of SWI at 6k above 10%, an incentive of £250 for 10 yrs in a row (as well as access to finance at a low interest rate) would be needed.

8.10.7.2 South East London loans scheme

Since 2004, the five local authorities in South East London Housing Partnership (Bexley, Bromley, Greenwich, Lewisham, and Southwark) have offered loans to vulnerable home-owners to assist them with home improvements, including insulation and new central heating, as well as structural repairs and disabled adaptations such as walk-in showers. The scheme illustrates how substantial improvements can be funded for households on very low incomes, by securing loans against the property.

In 2008-9, the 5 boroughs offered 118 loans totalling £1.14m between them, an average of just under £10,000 per loan. Most loans are between £5k and £15k, but the largest loans can be up to £40k where substantial works are required. The loans are interest-free, often combined with small grants, and are secured as a charge on the property. For private rented homes, regular repayments are made via direct debit or other billing arrangements, which can be met from rental income, and the full amount is repayable within 5 years. For home-owners, the loan is repayable in full when the property is sold (no regular repayments), and some loans are now starting to be recovered in this way. The residents (who must be elderly or disabled and on benefits) are assisted through the process by the boroughs' Home Improvement Agencies, which will survey the properties and specify the works, offer financial counselling and arrange the loan, suggest trusted builders, and supervise and inspect the works. The loans are financed by government funding for private sector renewal.

Loans have also been used by one local authority for able-to-pay householders to finance energy efficiency improvements by an energy refurbishment company, and were in this case recovered via direct debit over 3 years, with only 3% default rate.

8.10.7.3 Green Neighbourhoods Pilot – Early Lessons

Reasons for undertaking the Green Neighbourhood pilots:

- To test the Green Neighbourhoods delivery model by working with two Pilot neighbourhoods (one ‘on gas’ and one ‘off gas’);
- to trial the finance model (i.e. see whether it was possible to get householder contributions towards installed measures and to gauge funding leverage against potential for installed measures, & to test interest free loans scheme);
- to ascertain how difficult it would be to manage area based whole house retrofit in hard to treat properties;
- to establish any technical difficulties in relation to the installed measures;
- to get accurate carbon/cost savings for installed measures in participating households;
- to obtain an understanding of what marketing would be most effective for target group households.

Key lessons learned so far can be split into four sections (pilots to be completed by end August 2009 with reporting on lessons learnt by end September 2009.)

Financial

With regards to the finance model, key things were to a) see how much could be installed from a central pot of grant funding (equating to roughly £4K per household), b) to maximise funding leverage c) to test grants /loans combination as an incentive for householders.

The pilots established that it was in fact possible to get householder contributions from able to pay households towards the cost if installed measures (approximately £4K on average from participating households). On average approximately £9K was spend on each property. Unfortunately we did not mange to get a preferred lender to participate in a loans scheme. Four households out of eleven expressed a desire to utilise interest free loans for their contribution. Interestingly, all four households were happy to facilitate these loans themselves in the absence of us being able to provide a preferred lender.

Management

Key overall learning was that it was quite complicated to manage area based whole house retrofit in hard to treat properties. There were various reasons for this - the key ones being:

1. Application process – the application process was complicated as detailed information had to be evaluated, and then discussions (some quite protracted) had to take place with the householders to enable formal grant offer to be made. Each household was different with different needs and expectations and although the general approach was 'area based' each household had to receive a tailored bespoke offering following on from discussions about their individual circumstances and aspirations. Discussions then had to take place with the contractors/installers to ensure that they were aware of the householders needs.
2. Surveys – unable to do one whole house survey due to the complexity and varied nature of the installed measures requirement. The surveys needed to be split into three broad areas a) metering b) heating c) insulation to cover our 'whole house' remit. Lots of different agents were involved in the surveying process which made it difficult to co-ordinate and more disruptive to the householder
3 Co- coordinating the work – Like the surveys there were multiple installers required to carry out work within the pilot areas.

Technical

There were various technical barriers encountered to whole house retrofit in hard to treat properties:
1. Smart meters – pilots have sought to measure all energy use and not just electricity use. This has involved measuring pulse output from gas and water meters and transferring information to a central hub. Permission had to be gained from gas suppliers prior to installation of measurement systems. Older meters had to be replaced. Access issues were also a problem with certain households.
2. Insulation – the main lessons have been related to insulating solid wall properties. External insulation was discounted in one of the pilot areas as it was a conservation area. Internal insulation proved difficult in the older properties down to two main reasons a) the walls were uneven on some of the properties which the owners wanted to retain. b) the windows needed replacing which would normally take place prior to carrying out internal insulation work.
3. Heating - needed to ensure that new boilers were compatible with potential solar water panel systems if households were intending to install at a later date. On the whole heating systems were less problematic – although some householders found the quotes to be higher than they had expected. Some householders opted to contract their own heating installer

Communications

The delivery model was complex with many steps and difficult to explain to the householders. This was down to two main reasons. a) technical – the whole house approach was confusing to householders as grants were offered towards a raft of measures. b) financial – a combination of grants and loans have been offered (including signposting to other grants like LCBP) which were

based on ability to pay and tied to the costs of the measures. The financial offering was also confusing to householders.

8.10.7.4 Free energy efficiency measures and advice for Croydon residents

The London Borough of Croydon is participating in a trial project that will provide residents with a free visit from an energy expert. The energy expert will provide tailored advice on how to save money from energy bills and will also fit some simple measures to help residents increase the energy efficiency of their homes. The council has been successful in securing £70k from the London Development Agency to fund this trial project. The trial will take place between mid-July and mid-August in an area covering around 1,500 homes between Thornton Heath and Norbury train stations.

During the visit the energy expert will fit some simple measures that will help residents to save energy and water. These include:
Wireless energy monitors which monitor how much electricity is being used in the home and how much it is costing.

- Standby 'Powerdowns' that save electricity when you are not using your television and computer.
- Radiator panels that are fitted behind radiators and help to stop heat escaping through your walls.
- Draught proofing to help prevent warmth escaping around doors and windows.

The energy expert will also be able to see if residents are eligible for grants for loft and cavity wall insulation or a new heating system. Residents in the area will receive a letter with details of how they can book a free energy expert visit.

8.11 DELIVERY OF PAYS

PAYS financing should be open to any delivery company that becomes accredited. The principal is that multiple players should be allowed in the market to provide the maximum range of choice to the householder. This will also enable PAYS to interact freely with all potential trigger points for undertaking low energy refurbishment; builders and contractors from all trades could actively engage with low energy measures and be aware of the potential to utilise PAYS finance to fund low energy installations. The requirement for a comprehensive 'whole house' energy improvement plan for PAYS eligibility will help set the framework that avoids 'cream skimming' of the 'easier' measures and ensures installed measures complement each other.

Ensuring high standards and establishing an accreditation system

1. Standards
The overarching question on standards is whether a simpler scheme is established initially which is then gradually made more complex, or whether a comprehensive and complex scheme is designed and launched from the outset. Lessons from the existing energy efficiency programmes in the UK and proposed pilots will need to consider this.

Products, Materials & Systems
All materials, products and systems used in PAYS related refurbishment work should be covered by individual product performance standards to ensure they are reliable and are capable of performing as stated (subject to sufficient quality of installation – see below). A number of schemes covering this area are already in existence including:

- BBA (British Board of Agreement)
- FENSA
- Gas Safe Register

- Microgeneration Certification Scheme
- British Standards

Additional recommendations suggested include:

- Independent verification of product performance is crucial. It is recognised that performance 'in the lab' is rarely delivered in practice – and currently do little testing of the performance of products in the field.
- For example very little of the CERT £1bn a year is reinvested in testing what measures are actually delivering in practice. (An example was given of ASHP system COP which some manufacturers claim to now be above the 2.5 value used by BRE, but BRE say they have no funds to revise, and manufacturers say they can't afford to do this themselves at a typical cost of £75k).
- It will be critical that product standards are established in a way which ensures that data from field performance is fed back into the design stage of products. 'Self diagnostic' monitoring capability can – and should - be built into products, which allow them to provide valuable data on in-situ performance.
- Typically building fabric is much harder to verify the performance of than heating systems or microgeneration. For instance, with wall insulation, there can be variability of performance / actual U-value of 75% depending on how installed. Hence we either to:
    - Build in a factor of safety (at the design stage), or
    - Insitu test systems to determine a system performance (built using the installation instructions given) to use at the design stage
- Using the safety factor approach would result in overcompensation in many cases and provide no incentive for improvement.
- Products / systems are less of a problem – the process of installation where the problems tend to occur.

Design Stage & Installation

In addition to standards of performance for individual products, standards should also be established and enforced at (a) the design stage and (b) the installation of all PAYS-financed refurbishment work. This is to ensure that the quality of both advice and installation workmanship are sufficient to actually realise carbon savings in practice. Each stage of this process must be supervised and accredited.

(a) Design stage:

- The design needs to be right from the outset - if not everything else is impaired.
- To access PAYS finance there should be some kind of 'Whole House Assessment' undertaken by a trained and qualified person. The 'Whole House Assessor', using a common methodology (such as checklist for measures to consider) and approved software, to evaluate options for low energy refurbishment of the whole property, and recommend 2 or 3 options for how a whole house package could be delivered.
- The 'Whole House Assessment' is provided to the householder who is free to appoint a contractor to deliver the design specification (or part of it) similar to the architect / contractor division. The contract is responsible for specifying individual products & materials which deliver the overall performance characteristics specified by the Assessor.
- The assessment needs to be detailed and should consider all relevant low energy measures, give guidance on the sequencing / priority order of works to be undertaken, and should take into account the circumstances/lifestyle of occupants and how the house is used. This is the 'Standard' for the design stage.
- Two views were expressed as to who should undertake the whole house assessment:
    1. That it needs to be undertaken by someone independent of the contractors and be a single piece of work to be taken to multiple contractors for quote as the rough cost of a full survey is £300-£400/survey so cannot expect multiple contractors to carry out this level of detail and cost in order to quote for works. This begs two questions.

Firstly if the householder is to have no upfront cost who pays? Secondly if the householder is ultimately dissatisfied with the result who is to blame?

2. That each low energy provider undertakes their own assessment. The survey would be undertaken and performance quoted using the 'standard' assessment together with the PAYS Charge and anticipated savings for the work package(s). The low energy provider carries the cost of sales in the case of the householder not proceeding. This represents a risk to the provider but it is clear who is accountable if the householder is dissatisfied. On the negative side the companies undertaking the assessment know that then may not win the business and therefore may not get paid so may make a more superficial assessment.

- Not all PAYS related refurbishment work will be triggered by a Whole House approach – some may be triggered by smaller scale works e.g. a new kitchen or bathroom – but a Whole House Assessment report/design should still be provided, allowing the householder to decide what work to undertake and when.
- A standard factor of safety should be built into the design stage to give confidence that the householder receives the quoted benefit. Further work should be undertaken to determine what this factor should be.
- Likewise householders should be made aware that if internal temperatures rise then the benefit is being taken this way and the cost savings will be reduced.
- A common assessment methodology needs to be use at design stage – e.g. Full SAP, or an alternative? It is important the tools are suitable for low energy houses and have the option to can take into account different categories of occupancy.
- The SAP change process needs to be well managed, changes could include:
    - Regional climates
    - Grid carbon intensity assumptions (key)
    - Actual performance of building elements – feedback into model
    - Internal gains
    - Elevation and site exposure
    - Thermal bypassing
- There should also be supporting 'standards' which express best practice benchmarks, defining (in terms of kgCO2/m2, absolute tCO2, kWh/m2, EPC grades etc) what each house / property type should be aiming to achieve.
- These sorts of best practice 'standards' are not enforceable under PAYS because not all householders will be 'doing everything' to their property. However they could be incentivised (e.g. through stamp duty rebates).
- The 'whole house assessment' could be submitted to the accrediting body to develop a more detailed assessment of the UK housing stock.

(b) Installation stage:

- Good products installed badly will undermine performance and could prevent carbon/energy savings being realised in practice. (Research by Leeds Met suggests poor wall insulation installation can result in heat loss up to 100%+ over what was predicted, with average +20%).
- Standards at the installation stage must cover workmanship at all levels, and should also include the quality of overall project management sufficient to ensure all elements of work are properly integrated, and the package can 'do what it says on the tin'.
- Installation must be shown to have been carried out in a way which has been proved to be successful (i.e. achieved the required CO_2 savings) in another property elsewhere. The accreditation body will be responsible for checking that these 'standard' installation processes have been used (e.g. supported by photographic evidence). A small subset of houses will need to be thoroughly tested to ensure these processes have been adequately followed. Training courses will need to be developed in tandem with manufacturers.
- New tests will need to be developed to help evidence quality of installation (e.g. United House have been developing approaches to test individual rooms for air tightness).
- Sub contractors should be subject to the same standards & training.

(c) Consumer Interface:

- The consumer interface will also be key - householders need to know how to use the technologies installed, understand the controls, understand how to 'live' in the house to realise potential savings
- They could possibly be written / compiled by the contractor or person who signs off the work – e.g. drawing on specialist input from manufacturers. Ideally they should be supported by coaching.
- The amount of control which consumers will 'see' may not actually be that great – the complexity comes as new measures are added over the household lifetime.
- Log books were discussed which all installers would have to complete, like a service history for a car. This would become a normal duty of installer / trades person following any work.
- Controls will need to be simple. Minimal user interface is key, the more you ask people to do, the greater the scope for errors. YET – social science is full of evidence to suggest people love / need to have a sense of control.
- Maybe we don't need to solve how the manual is written or who provides it – but we ask the accreditation body to make sure we ensure that whatever is put in situ actually works in practice.
- There is a danger of providing an over complicated systems – designing complicated systems always requires complicated controls (example of SWH with GSHP supplement and also electric immersion heater).

Skills & Knowledge

(a) Training

- 'Everyone needs to understand everything' – there are huge skills / training / knowledge issues with bringing everyone in the chain up to the necessary level of understanding.
- What is needed is 'underlying knowledge' (NVQ language) of whole house refurbishment, spread across the whole industry, and integrated into all relevant courses offered by FE colleges, universities, etc. This then needs to be supplemented by training, in specific skills & trades.
- There will need to be targeted training for both supervisors / project managers, as well as those who undertake the work.
- If there is confidence then the skills will naturally follow. But it is pointless (and risky) to develop skills before there is a market. Must not be oversold – as has happened in the EPC market. Vocational qualifications, where individuals are required to bear the risk of training based on a future possible scheme, are not the right way to solve competency problems.
- Do we need a retrofitting diploma? No, a better idea would be for <u>all</u> relevant courses in the area to have a significant element on low energy retrofit. And for bodies like RICS, RIBA etc to say that if they don't have a significant element coming through in say two years then the existing partnership arrangement would disappear. Go for soft start – using existing organisations.
- Must be aware that in coming out of a recession, quality (of construction) typically falls – people who have been laid off during the recession are not necessarily those who are drawn in as activity starts to rise again – leading to skills deficits within the industry.
- Do we have enough people to actually <u>do the training</u>? It may be harder to find the people to recommend the right solutions than it is to find the customers. However, rather than starting from scratch – aim to leverage the skills already available (e.g. build on DEAs etc).
- Beware of demanding too much, too soon. Many people are already competent to assess CWL, LI etc, less are competent to assess heating systems, and even less are currently competent to install microgeneration. Start with the simple measures, with a 'soft start' (although recognise this is possibly less attractive to politicians).
- A business link type model could be effective – e.g. working with local trades to help them know about schemes, access training, etc.

(b) Accreditation

- Accreditation will need to be provided for both (a) designers and (b) installers – see above.
- Accreditation will consist of several elements – evidence of a course to demonstrate knowledge, supported by random on-site audits (or reviews of whole house assessment reports) to ensure compliance with the necessary standard.
- Whoever is carrying out the PAYS related refurbishment work should only be able to access the PAYS finance stream if they are accredited to the accepted standard. In the event of performance failure, the sanction to the installer is that they are denied access to the PAYS finance in future. This should provide a strong motivator towards quality.
- Accreditation should be provided by a single body (effectively a monopoly), who sets the standards and polices. The experience with the accreditation of DEAs was that accreditation went to a competitive model, which effectively drove down standards as organisations competed to provide accreditation at lowest cost, rewarding those who undertook less monitoring, resulting in the accreditation bodies themselves having to be policed.

Business Model

(a) Procurement Mechanism

- We need new forms of contracts which incentivise quality (of thermal performance). Essentially the contract needs to be structured so as to ensure that all the other elements in the 'flow chart' (see page following) are in place.
- Payment is only provided to the contractor when it is shown that the job has been done properly.
- When signing up the client, there is a need to ensue the client understands that the energy savings delivered are impacted by behaviour.

(b) Project Management

- Good project management is essential for ensuring ultimate quality and the savings are delivered and householder satisfaction is delivered.
- Separate training must be given to project managers, and standards must apply equally to project management as to actual installation work.

Guarantees / assurance of performance

(a) Holding Installers to Account

- We need to ensure that workmanship is of sufficient quality that no harm is done to the house, that the installation has a reasonable lifetime, and the performance of the components is 'as expected' – i.e. that the refurbishment can deliver the CO_2 predicted by the design.
- Householders are so variable in how they use their houses, that it is difficult to guarantee that the predicted saving will be realised
- What we can offer is assurance of quality, but this is not a guarantee of meeting the projected savings.
- Inadequate performance will boil down to one of the following:
    - The specification being wrong (designer)
    - The material / system being wrong (manufacturer)
    - The installation being wrong (contractor)
    - The householder using the house / system incorrectly (householder)
- If a house is not seen to be 'performing' as expected, then first action should be to sit down with householder and look at what is not working, and firstly look at how they might be influencing it through behaviour – then have a process for moving to the 'next level' if still not performing.
- We can tackle consumer behaviour as part of the design & installation process (i.e. include behavioural education / coaching as part of the package), which will help ensure savings are realised. Then we can allow for a 'behaviour distribution' (i.e. a distribution

of performance, based on different behaviour regimes – then we take a cut-off based on e.g. the 90th centile) as well as a 'fabric distribution'.
- Car parallel – a car can be purchased on the basis of a notional/indicative mpg value – but clearly behaviour affects the actual value and the car manufacturer will not be held to account if this mpg is not exactly realised by the buyer. (Cars may give a range – e.g. in-town, motorway driving etc, based on different behaviour regimes).
- We need to start developing protocols for materials & systems such that increasingly there are 'plug and play' (like all computer USB ports being the same size) – this will assist quality of installation make savings more robust.

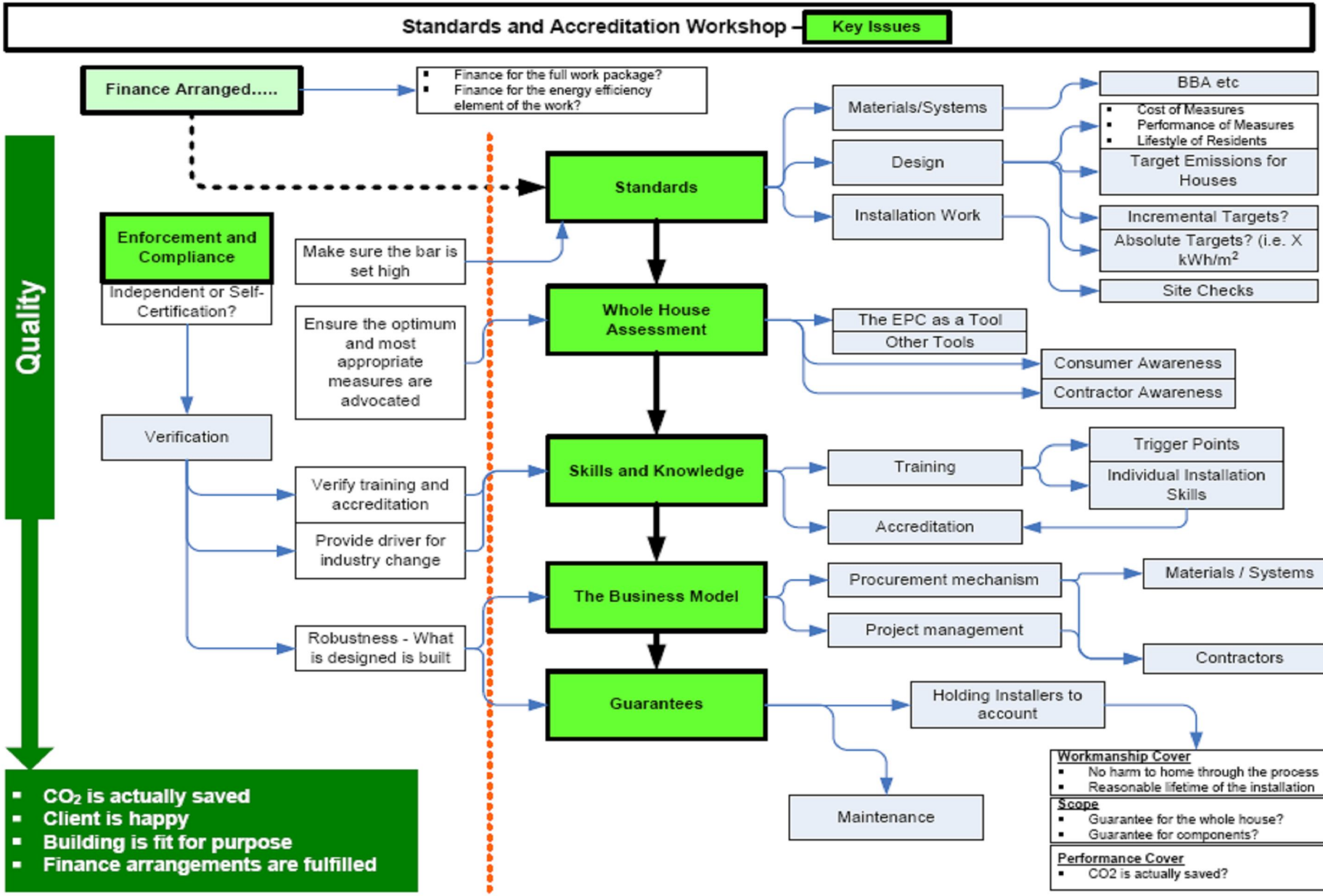
(b) Ongoing Maintenance

- This could be potential problems with ongoing maintenance of the property e.g. adding new sockets to an internally insulated wall could affect performance.
- Performance would be subject to certain maintenance conditions
- Certain measures (e.g. boilers) both require regular maintenance and the expected life is less than 25 years. These measures need to be identified to prevent consumers making assumptions.
- The ESCo model is potentially more amenable to supporting systems over a long life span since it allows more easily for the replacement cycle (e.g. of boilers).
- Is there an enduring relationship with the consumer beyond the installation?
- There is a natural incentive for energy suppliers to retain a consumer over a long period of time, since it creates added value.
- Is the 'account management' with the householder has to be undertaken by the financier – this is the enduring relationship – who a householder might turn to fix problems encountered.

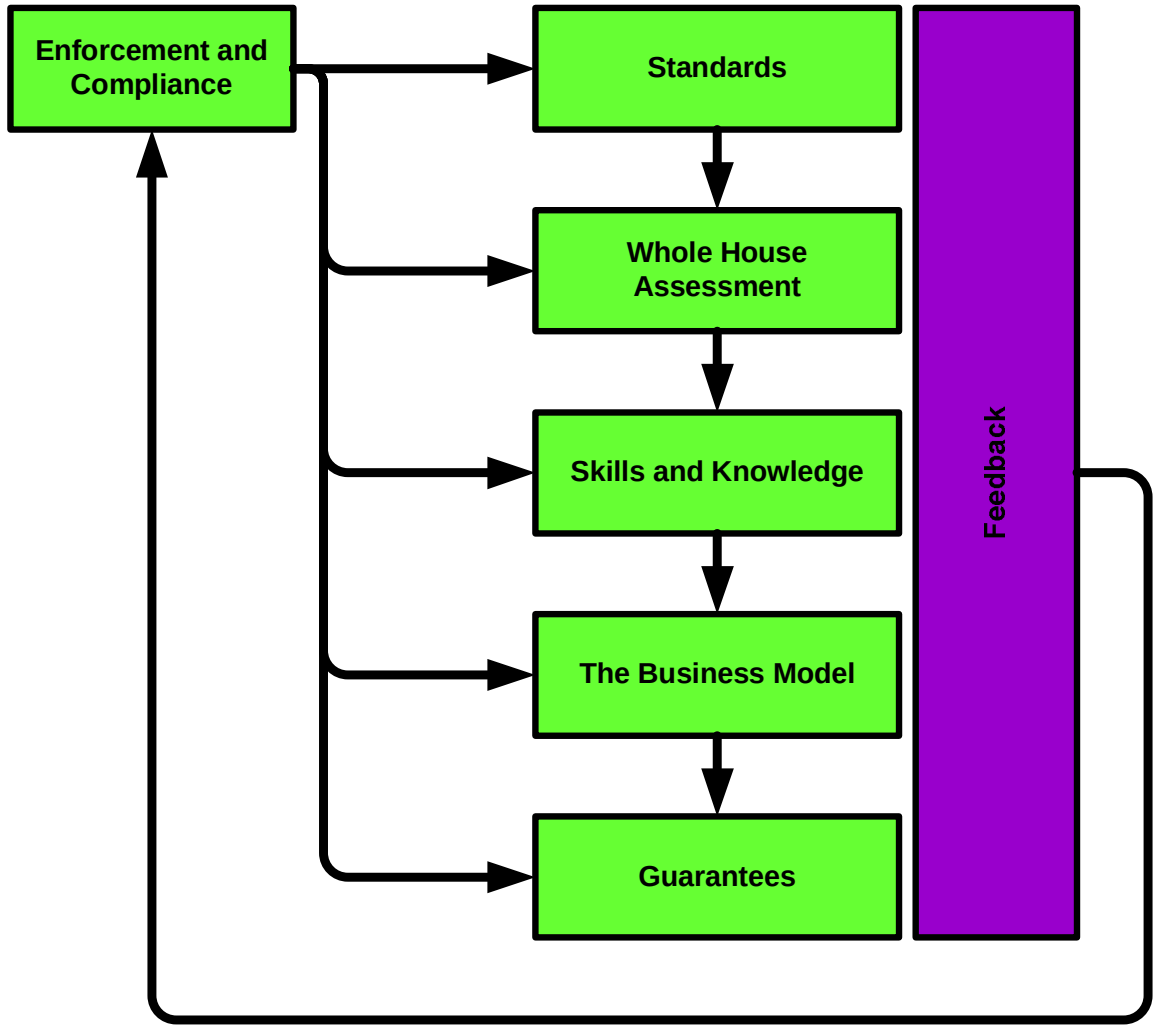
(c) Overarching Theme: Enforcement & Compliance

- Quality of process – while we have many assessment tools, we have a total blind spot on process, with no proper systems in place. Quality of process is crucial.
- Everything (in the diagram) is important. Success of the whole system relies on taking each part seriously.
- Currently there is no institutional framework for delivery (of low energy refurb). However models such as NHBC do deliver certain aspects of performance.
- Measurement works – NB mandatory air pressure testing has brought air leakage rates down from 10 to 6 (W/m2K).
- Look to the CWI (cavity wall insulation) industry – each technician/installer is inspected 4 times a year! The cost of this is then built into the price.
- 'Do we want zero carbon on paper, or in practice?!' We need to acknowledge that there is no market (currently) in delivering savings in practice – just (in the new build sector) on paper – thus while high performance (in a lab) products & materials are likely to be favoured good quality installation is not rewarded.
- We can develop whole house U-value based on design, but will we get the actual individual U values and thermal bridges right?
- Need to acknowledge that systems (e.g. heating) will perform differently in a highly insulated building than in a poorly insulated one. However, with field testing we should increase understanding and knowledge over time.
- Initially, we may have to build in greater safety factors to the design stage (see 'Design').
- Need to satisfy the householder that schemes will deliver – but also need to satisfy the financiers. Therefore there are two lines of feedback (possibly 3):
    - Confidence to householder
    - Confidence to financiers
    - Confidence to government
- Finance people will want to know that the processes are robust, not necessarily that each house is delivering. This will be a bit like NHBC who underwrite house builders.

ISSUES CHART



PROCESS FLOW



Appendix A

PAYS financial illustrations

Appendix A.1

Property descriptions

Solid Wall 3 Bed Semi

Measures:

- Boiler controls
- Solid wall insulation:
  - Internal wall insulation (U 2.0 to .35)
  - External wall insulation (U 2.0 to 0.35)
- Insulated suspended wooden floor (U 0.72 to 0.22)
- 100% Low energy lighting
- Real time displays and Home energy advise
- Loft insulation (100mm to 300mm)
- Insulated cylinder to 80mm
- Reduced air leakage

CO2 saving

- circa 40% (regulated CO2 only)
- 95tCO2 lifetime
- 2.6tCO2 per year

Cost (assumes mass scale):

- Internal Wall Insulation £7,100 (assuming mass scale)
- External Wall Insulation £10,900 (assuming mass scale)

Fuel cost before low energy work

- Energy Scenario 1 £1,144
- Energy Scenario 2 £1,307
- Energy Scenario 3 £1,471

Solid Wall 3 Bed Terrace

Measures:

- Boiler controls
- Solid wall insulated internally (U=2.0 to U=0.35)
- Insulated suspended wooden floor (U=0.72 to U=0.22)
- 70% Low energy lighting
- Reduced air leakage

CO2 saving

- circa 38% (regulated CO2 only)
- 58tCO2 lifetime
- 1.4tCO2pa

Cost £4,100

Fuel cost before low energy work

- Energy Scenario 1 £822
- Energy Scenario 2 £939
- Energy Scenario 3 £1,057

'Super Home' detached
An average Super Home from circa 20 properties using data from the Existing Homes Alliance
Typical measures might include:

- Solid wall insulation
- Loft insulation (100mm to 400mm)
- 70% Low energy lighting
- Reduced air leakage
- Condensing boiler or biomass
- New windows (part or full)
- Solar hot water
- Etc

CO2 saving:

- circa 60% (regulated CO2 only)
- 249tCO2 lifetime
- 6.2tCO2pa

Cost: £21,600
Fuel cost before low energy work

- Energy Scenario 1 £1214
- Energy Scenario 2 £1387
- Energy Scenario 3 £1,560

Conversion of the subsidy cost expressed in £/TCO2 into a total amount for each property type

Subsidy	Semi detached		Terrace	Super Home (Detached)
£/t CO2	**Package including internal wall insulation**	**Package including external wall insulation**		
£50	£4,400	£4,700	N/A	£12,500
£40	£3,600	£3,800	£2,300	£10,000
£20	£1,700	£1,900	£1,100	£5,000

A reduced interest rate is also a form of subsidy

Appendix A.2

Illustration – Semi-detached house upgrade with a whole house package including internal insulation

Energy price scenario: **EP 1**
Property: **3 Bed Semi**
Low energy package: **Internal Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£206	£246	£345
	£ 20	£0	£155	£298	£416
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£273	£180	£254
	£ 20	£0	£205	£248	£348
	£ 40	£0	£136	£216	£442
	£ 50	£0			
4.0%	£ 20	£0	£262	£190	£269
	£ 40	£0	£175	£278	£389
	£ 50	£0	£131	£322	£449
6.5%	£ 20	£0	£349	£103	£149
	£ 40	£0	£233	£220	£309
	£ 50	£0	£174	£278	£389
7.5%	£ 20	£0	£387	£66	£98
	£ 40	£0	£258	£195	£275
	£ 50	£0	£193	£260	£364

Householder saving pa after PAYS Charge expires **£ 954**

EP 1 Starting energy price based on Quarter 4 2008 -10% with and annual inflation assumed of 1.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 2**
Property: **3 Bed Semi**
Low energy package: **Internal Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£206	£204	£354
	£ 20	£0	£155	£256	£425
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£273	£138	£263
	£ 20	£0	£205	£206	£357
	£ 40	£0	£136	£274	£450
	£ 50	£0			
4.0%	£ 20	£0	£262	£148	£277
	£ 40	£0	£175	£236	£398
	£ 50	£0	£131	£280	£458
6.5%	£ 20	£0	£349	£61	£158
	£ 40	£0	£233	£178	£318
	£ 50	£0	£174	£236	£398
7.5%	£ 20	£0	£387	£24	£107
	£ 40	£0	£258	£153	£284
	£ 50	£0	£193	£218	£373

Householder net 'saving'pa after PAYS Charge removed **£ 1,067**

EP 2 Starting energy price based on Quarter 4 2008 -20% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 3**
Property: **3 Bed Semi**
Low energy package: **Internal Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	0	**£0**	**£206**	**£153**	**£275**
	20	**£0**	**£155**	**£205**	**£345**
	40	**£0**			
	50	**£0**			
2.0%	0	**£0**	**£273**	**£86**	**£183**
	20	**£0**	**£205**	**£155**	**£277**
	40	**£0**	**£136**	**£223**	**£371**
	50	**£0**			
4.0%	20	**£0**	**£262**	**£97**	**£198**
	40	**£0**	**£175**	**£184**	**£318**
	50	**£0**	**£131**	**£228**	**£378**
6.5%	£ 20	**£0**	**£349**	**£10**	**£78**
	£ 40	**£0**	**£233**	**£127**	**£238**
	£ 50	**£0**	**£174**	**£184**	**£318**
7.5%	20	**£0**	**£387**	**-£27**	**£27**
	40	**£0**	**£258**	**£102**	**£204**
	50	**£0**	**£193**	**£166**	**£293**

Householder net 'saving'pa after PAYS Charge removed **£ 934**

EP 3 Starting energy price based on Quarter 4 2008 -30% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Appendix A.3

Illustration – Semi-detached house upgrade with a whole house package including external insulation

Energy price scenario: **EP 1**
Property: **3 Bed Semi**
Low energy package: **External Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£317	£167	£237
	£ 20	£0	£262	£222	£313
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£418	£65	£98
	£ 20	£0	£346	£137	£198
	£ 40	£0	£273	£210	£297
	£ 50	£0			
4.0%	£ 20	£0	£445	£38	£61
	£ 40	£0	£351	£132	£190
	£ 50	£0	£305	£179	£354
6.5%	£ 20	£0	£590	-£107	-£138
	£ 40	£0	£466	£17	£32
	£ 50	£0	£404	£79	£117
6.5%	£ 20	£3,000	£395	£90	£132
	£ 40	£2,000	£335	£148	£213
	£ 50	£0			
7.5%	£ 20	£0			
	£ 40	£0	£516	-£33	-£36
	£ 50	£0	£447	£36	£58

Householder net 'saving'pa after PAYS Charge removed **£ 1,000**

EP 1 Starting energy price based on Quarter 4 2008 -10% with and annual inflation assumed of 1.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 2**
Property: **3 Bed Semi**
Low energy package: **External Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£317	£121	£247
	£ 20	£0	£262	£176	£322
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£418	£20	£107
	£ 20	£0	£346	£98	£207
	£ 40	£0	£273	£165	£307
	£ 50	£0			
4.0%	£ 20	£0	£445	-£7	£71
	£ 40	£0	£251	£87	£199
	£ 50	£0	£305	£134	£263
6.5%	£ 20	£0	£590	-£152	-£129
	£ 40	£0	£466	-£28	£42
	£ 50	£0	£404	£34	£127
6.5%	£ 20	£3,000	£395	£45	£142
	£ 40	£2,000	£335	£103	£222
	£ 50	£0			
7.5%	£ 20	£0			
	£ 40	£0	£516	-£78	-£27
	£ 50	£0	£447	-£9	£68

Householder net 'saving'pa after PAYS Charge removed £ 1,143

EP 2 Starting energy price based on Quarter 4 2008 -20% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 3**
Property: **3 Bed Semi**
Low energy package: **External Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£317	£67	£162
	£ 20	£0	£262	£122	£237
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£418	-£35	£22
	£ 20	£0	£346	£38	£122
	£ 40	£0	£273	£110	£222
	£ 50	£0			
4.0%	£ 20	£0	£445	-£62	-£15
	£ 40	£0	£351	£32	£114
	£ 50	£0	£305	£79	£178
6.5%	£ 20	£0	£590	-£207	-£214
	£ 40	£0	£466	-£83	-£43
	£ 50	£0	£404	-£21	£42
6.5%	£ 20	£3,000	£395	-£10	£57
	£ 40	£2,000	£335	£49	£137
	£ 50	£0			
7.5%	£ 20	£0			
	£ 40	£0	£516	-£132	-£112
	£ 50	£0	£447	-£64	-£18

Householder net 'saving'pa after PAYS Charge removed £ 1,012

EP 3 Starting energy price based on Quarter 4 2008 -30% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Appendix A.4

Illustration – Terraced house upgrade with a whole house package including internal insulation

Energy price scenario: **EP 1**
Property: **Terrace**
Low energy package: **Internal Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£119	£172	£285
	£ 20	£0			
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£158	£134	£232
	£ 20	£0	£113	£178	£293
	£ 40	£0			
	£ 50	£0			
4.0%	£ 20	£0	£146	£146	£248
	£ 40	£0	£89	£203	£326
	£ 50	£0			
6.5%	£ 20	£0	£193	£99	£183
	£ 40	£0	£118	£174	£287
	£ 50	£0			
7.5%	£ 20	£0	£214	£77	£154
	£ 40	£0	£131	£161	£269
	£ 50	£0			

Householder saving pa after PAYS Charge expires **£ 954**

EP 1 Starting energy price based on Quarter 4 2008 -10% with and annual inflation assumed of 1.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 2**
Property: **Terrace**
Low energy package: **Internal Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£119	£145	£293
	£ 20	£0			
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£158	£107	£240
	£ 20	£0	£113	£151	£301
	£ 40	£0			
	£ 50	£0			
4.0%	£ 20	£0	£146	£118	£256
	£ 40	£0	£89	£175	£335
	£ 50	£0			
6.5%	£ 20	£0	£193	£71	£192
	£ 40	£0	£118	£147	£295
	£ 50	£0			
7.5%	£ 20	£0	£214	£50	£162
	£ 40	£0	£131	£134	£277
	£ 50	£0			

Householder net 'saving'pa after PAYS Charge removed **£ 811**

EP 2 Starting energy price based on Quarter 4 2008 -20% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 3**
Property: **Terrace**
Low energy package: **Internal Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	**£0**	**£119**	**£112**	**£236**
	£ 20	**£0**			
	£ 40	**£0**			
	£ 50	**£0**			
2.0%	£ -	**£0**	**£158**	**£74**	**£183**
	£ 20	**£0**	**£113**	**£118**	**£244**
	£ 40	**£0**			
	£ 50	**£0**			
4.0%	£ 20	**£0**	**£146**	**£85**	**£199**
	£ 40	**£0**	**£89**	**£142**	**£278**
	£ 50	**£0**			
6.5%	£ 20	**£0**	**£193**	**£38**	**£135**
	£ 40	**£0**	**£118**	**£114**	**£238**
	£ 50	**£0**			
7.5%	£ 20	**£0**	**£214**	**£17**	**£105**
	£ 40	**£0**	**£131**	**£101**	**£220**
	£ 50	**£0**			

Householder net 'saving'pa after PAYS Charge removed **£ 709**

EP 3 Starting energy price based on Quarter 4 2008 -30% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Appendix A.5

Illustration – 'Super Home' detached house upgrade with a whole house package including solid wall insulation

Energy price scenario: **EP 1**
Property: **SuperHome**
Low energy package: **Solid Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£628	£96	£251
	£ 20	£0			
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£830	-£105	-£26
	£ 20	£0	£638	£86	£238
	£ 40	£0			
	£ 50	£0			
4.0%	£ 20	£0	£822	-£97	-£14
	£ 40	£0	£575	£150	£325
	£ 50	£0			
6.5%	£ 20	£0			
	£ 40	£0	£762	-£37	£68
	£ 50	£0	£598	£126	£293
6.5%	£ 20	£7,800	£579	-£4	£198
	£ 40	£3,000	£565	£159	£338
	£ 50	£0			
7.5%	£ 20	£0			
	£ 40	£0	£884	-£119	-£44
	£ 50	£0	£662	£62	£205

Householder saving pa after PAYS Charge expires **£ 1,762**

EP 1 Starting energy price based on Quarter 4 2008 -10% with and annual inflation assumed of 1.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 2**
Property: **SuperHome**
Low energy package: **Solid Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	£ -	£0	£628	£29	£272
	£ 20	£0			
	£ 40	£0			
	£ 50	£0			
2.0%	£ -	£0	£830	-£173	-£5
	£ 20	£0	£638	£19	£269
	£ 40	£0			
	£ 50	£0			
4.0%	£ 20	£0	£822	-£165	£7
	£ 40	£0	£575	£83	£346
	£ 50	£0			
6.5%	£ 20	£0			
	£ 40	£0	£762	-£105	£89
	£ 50	£0	£598	£59	£313
6.5%	£ 20	£7,800	£579	£78	£340
	£ 40	£3,000	£565	£92	£359
	£ 50	£0			
7.5%	£ 20	£0			
	£ 40	£0	£884	-£186	-£23
	£ 50	£0	£662	-£5	£226

Householder net 'saving'pa after PAYS Charge removed **£ 2,014**

EP 2 Starting energy price based on Quarter 4 2008 -20% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Energy price scenario: **EP 3**
Property: **SuperHome**
Low energy package: **Solid Wall Insulation + other measures**

Interest rate	Subsidy	Householder contribution	PAYS Charge	Householder net annual 'saving'	
			ave over period	5 year average	Average over 25 years
	£/TCO2	£	£ per year	£ per year	£ per year
0.0%	0	**£0**	**£628**	**-£53**	**£130**
	20	**£0**			
	40	**£0**			
	50	**£0**			
2.0%	0	**£0**	**£830**	**-£255**	**-£147**
	20	**£0**	**£638**	**-£63**	**£117**
	40	**£0**			
	50	**£0**			
4.0%	20	**£0**	**£822**	**-£247**	**-£135**
	40	**£0**	**£575**	**£0**	**£204**
	50	**£0**			
6.5%	£ 20	**£0**			
	£ 40	**£0**	**£762**	**-£187**	**-£53**
	£ 50	**£0**	**£598**	**-£23**	**£172**
6.5%	20	**£7,800**	**£579**	**£146**	**£319**
	40	**£3,000**	**£565**	**£10**	**£217**
	50	**£0**			
7.5%	20	**£0**			
	40	**£0**	**£884**	**-£269**	**-£165**
	50	**£0**	**£662**	**-£87**	**£84**

Householder net 'saving'pa after PAYS Charge removed **£ 1,784**

EP 3 Starting energy price based on Quarter 4 2008 -30% with and annual inflation assumed of 2.5% above the retail prices index (RPI) of 2.5%

Appendix B

Land Charge Legislation

APPENDIX B.1
LOCAL LAND CHARGES EXAMPLES

1 Highways Act 1980

1.1 **Creation of liability**

A council or a highway authority may recover from the owner for the time being of premises expenses incurred by it for the repayment of which the owner of the premises is liable either under certain statutory provisions (set out below) or by agreement with the council or authority, together with interest (*Section 305(1)*).

Removal of projections from buildings:

Under s.152, a competent authority may serve notice on the owner of the building and/or the occupier to remove an obstruction to safe or convenient passage along a street.

If a person fails to comply with a notice served, the authority may remove the obstruction or projection to which the notice relates and may recover the expenses reasonably incurred by it in so doing from the person on whom the notice was served.

Doors and gates opening outwards:

Under s.153, the local authority (or highway authority, as the case may be) may serve notice on the occupier to alter a door, gate or bar so as not open outwards.

If a person fails to comply with a notice served, the authority may do the work required and recover the expenses reasonably incurred from the owner or occupier of the premises.

Repair and fencing of premises causing danger or annoyance:

Under s.165, the local authority may serve notice on the owner or occupier of land requiring him to repair, protect, remove or enclose in order to obviate any danger.

If a person fails to comply with a notice served, the authority may execute such works as are necessary to comply with the notice and may recover the expenses reasonably incurred by it in so doing from the person on whom notice was served.

Retaining walls near streets:

Under s.167, if a retaining wall is in such condition as to be liable to endanger persons using a street, the local authority may serve notice on the owner or occupier of the land on which the wall is, requiring him to execute such works as will obviate the danger.

Building over a highway:

Under s.177, where a person has constructed or altered a building for the construction or alteration of which a licence is required, without such a licence or otherwise and in accordance with its terms and conditions, the highway authority may serve notice on the licensee or the owner of the building requiring him to demolish the building or to make alterations.

If a person fails to comply with a notice served, the highway authority may demolish the building or, as the case may be, execute such works or take such steps as are necessary to comply with the notice and may recover the expenses reasonably incurred by it in doing so from that person.

Entrances and openings into cellars and other premises:

Under s.180, a person who carries out works in the street to provide means for the admission of air or light to premises situated under, or abutting on, the street without the consent of the local authority, or who fails to comply with the requirement made to him, is guilty of an offence and is liable on summary conviction to a penalty.

Habitual use of footway or verge as a vehicle crossing:

Under s.184, the highway authority may serve notice on the owner and occupier of any premises adjoining or having any access to a highway maintainable at the public expense who habitually takes or permits to be taken a vehicle across a kerbed footway or a verge in the highway to or from those premises. A person knowingly using a footway or a verge as a crossing in

contravention of any condition imposed by the notice, or knowingly permitting it to be so used, is guilty of an offence.

Repairs under the Highways Act 1980:

Under s.230, the street works authority may serve notice on owners of premises fronting a private street in need of repairs to obviate danger to traffic.

If the repairs have not been executed within the time specified in the notice, the authority may execute the repairs and recover the expenses reasonably incurred by it in so doing from the owners in default, the expenses being apportioned between the owners according to the extent to which their premises front the street.

As from the date of completion of works, the expenses and accrued interest are a charge on the premises and all estates and interests in them.

1.2 Calculation of amount

The amount is generally stated as being the expenses reasonably incurred.

1.3 Repayment/Enforcement

The council or highway authority may by order declare any expenses and interests recoverable to be payable by annual instalments within a period not exceeding 30 years, together with interest on them at such reasonable rates as the authority may determine (*s.305(2)*).

Any instalments and interest, or any part thereof, may be recovered from the owner or occupier for the time being of the premises in respect of which the expenses are incurred.

The council or highway authority may recover sums to which they are entitled either summarily as a civil debt or in any court of competent jurisdiction (*s.305(5)*).

Any charge acquired by a council under the provisions described above is a local land charge (*s.305(6)*).

Paragraph 24 of Schedule 24 to the Act amended the Local Land Charges Act 1975 to provide that any charge within the Act is a local land charge.

2 Building Act 1984

2.1 **Creation of Liability**

Where a local authority has incurred expenses for whose repayment the owner of the premises in respect of which the expenses were incurred is liable, either under the Act or by agreement with the authority, those expenses, together with interest from the date of service of a demand for the expenses, may be recovered by the authority:

(a) from the person who is the owner of the premises at the date on which the works are completed; or

(b) if he has ceased to be the owner of the premises before the date on which a demand for the expenses is served, either from him or from the person who is the owner at the date on which the demand is served.

The Act provides for a number of expenses for which the owner of the premises would be liable. These include, amongst others, expenses incurred due to: contravention of Building Regulations; use of materials unsuitable for permanent building; and, drainage requirements.

As from the date of the completion of the works, the expenses and interest due on it are, until recovered, a charge on a premises and on all estates and interests in them.

2.2 Calculation of amount

If a person fails to comply with a notice served, the local authority may execute the works itself and recover from that person the expenses reasonably incurred by it in doing so (*Section 99 (2)(a)*).

2.3 Repayment/enforcement

The local authority may by order declare any expenses recoverable by it to be payable with interest by instalments within a period not exceeding 30 years, until the whole amount is paid (*Section 108 (1)*).

Such an order may be made at any time with respect to an unpaid balance of expenses and accrued interest but the period for repayment must not in any case extend beyond 30 years from the service of the first demand for the expenses. Any such instalments and interest, or a part of it, may be recovered from the owner or occupier for the time being of the premises in respect of which the expenses were incurred, and, if recovered from the occupier, may be deducted by him from the rent of the premises. However, an occupier is not required to pay at any one time a sum in excess of the amount that was due from him on account of rent at, or has become due from him on account of rent since, the date on which he received a demand from the local

authority together with a notice requiring him not to pay rent to his landlord without deducting the demanded sum.
A sum that a local authority is entitled to recover under the Act and with respect to whose recovery provision is not made by any other provision of the Act, may be recovered as a simple contract debt in any court of competent jurisdiction.
Without prejudice to the power of the local authority to execute works and recover the expenses incurred for doing so, the person failing to execute the works following service of a notice is liable on summary conviction to a fine and to a further fine for each day on which the default continues after conviction.
Paragraph 16 of Schedule 6 to the Act amended the Local Land Charges Act 1975 to provide that any charge within the Act is a local land charge.

3 Coast Protection Act 1949

3.1 **Creation of Liability**

A works scheme may indicate land as land in respect of which coast protection charges are to be payable under the scheme on the grounds that it will benefit it by the carrying out of the work provided for by the scheme (*Section 7(1)*).
A coast protection authority serves copies of the works scheme on the owner and occupier of any land on which the work provided for by the scheme is to be carried out (*Section 8 (1)*).

3.2 Calculation of amount

Under s.7(4), the works scheme which provides for the levying of coast protection charges either:

(a) specifies the persons by whom such charges are to be paid, the amount of the charge to be paid by each person and the interest in land by reference to which the charge is levied upon him; or

(b) states that the authority by whom the scheme is prepared will, within such period after the completion of the work as may be specified in the scheme, determine the interests in land by reference to which coast protection charges are to be levied and, in the case of each of those interests, the amount of the charge leviable in respect thereof.

In a case falling within paragraph (b), a coast protection charge is payable by the person who, at the time of the determination of the interest by reference to which the charge is to be levied, is entitled to that interest.

3.3 Repayment/enforcement

If the scheme provides for the levying of coast protection charges the persons on whom copies of the scheme are served includes:

(a) where the scheme specifies the persons by whom such charges are to be paid, each of those persons;

(b) where the scheme contains a statement as mentioned in paragraph (b) above, all owners of the land concerned.

The works scheme indicating land as land in respect of which coast protection charges are to be payable under the scheme is, when operative, a local land charge (*s. 8(8)*).

4 Land Drainage Act 1991

4.1 **Creation of liability**

Where the Environment Agency is of the opinion that any land is capable by improvement by drainage works but that the constitution for that purpose of an internal drainage district would not be practicable (or a local authority other than a district council is of that opinion in relation to any land in their area) the Environment Agency (or local authority, as the case may be) may in accordance with the provisions of a scheme made by it or under s.18(1) of the Act, enter onto the land and carry out such drainage works as appears to it desirable.

4.2 Calculation of amount

A scheme under Section 18 of the Act must state:

(a) the works proposed to be carried out;

(b) the area to be improved by the works;

(c) the estimated expenses (including administrative expenses) of carrying out the works;

(d) the maximum amount to be recoverable by the Environment Agency or local authority in respect of those expenses; and

(e) the manner in which expenses of carrying out and maintaining the works are to be apportioned amongst the land comprised in the area to be improved.

4.3 Repayment/enforcement

Under s.18(5), the expenses incurred by the Environment Agency or local authority in carrying out drainage works, to an amount not exceeding the amount stated in the scheme, as well as those incurred by the Environment Agency or local authority in maintaining works carried out by the Environment Agency or the authority are, according to the apportionment provided for by the scheme, recoverable by the Environment Agency or authority by the several owners of the lands to which the scheme relates.

A scheme made under s.18 of the Act is a local land charge (*s.18(8)*).

APPENDIX B.2

Part 4 Charge	
Nature of Charge	The entire area of this authority is subject to Smoke Control Orders made under the provisions of The Clean Air Act 1956, Section 11.

Part 3 Charge	
Nature of Charge	County of London (Paddington No 10) Tree Preservation Order 1957;, (Town and Country Planning Act 1947)
Originating Authority	Westminster City Council
Document Inspection at	City Hall, Victoria Street, London, SW1E 6QP, SW1E 6QP
Registration Date	12 December 1958

Part 3 Charge	
Nature of Charge	Bayswater Conservation Area, (Town and Country Planning Act 1971 and Town and Country Amenities Act 1974)
Originating Authority	Westminster City Council
Document Inspection at	City Hall, Victoria Street, London, SW1E 6QP, SW1E 6QP
Registration Date	12 December 1974

Part 3 Charge	
Nature of Charge	Listed Building Enforcement Notice served on 6.10.2005 and taking effect on 16.11.2005. Comply date - 15/02/06., [Planning [Listed Building and Conservation Acts] 1990]
Originating Authority	Westminster City Council
Document Inspection at	City Hall, Victoria Street, London, SW1E6QP, SW1E6QP
Registration Date	10 October 2005

Appendix C –

Water Billing - Legal Considerations for a Water Company Charge

How could it work (one potential model)

The water supplier (the "Supplier") would enter into an agreement ("PAYS Agreement") with owners or occupiers of premises to whom it supplies water (the "Consumer") to supply the works and services relating to the low energy retrofit envisaged by the scheme (the "PAYS Works").
The 3rd party finance company established to administer the scheme (the "Administrator") would procure the PAYS Works either through a contractor group company ("Internal Contractor") or through a third party contractor ("External Contractor"). The costs of the contractor carrying out the PAYS Works would be met by the Administrator, funded in part by Government grants, and in part by wholesale finance ("Loans") provided to the Administrator by third parties. The Administrator would enter into an agreement with the Supplier to procure the supply of the PAYS Works and services and to hold the Supplier harmless, and the Supplier will pass through the repayment of the sums.
Under the PAYS Agreement between the Supplier and each Consumer, regular repayments would be due from the Consumer to the Supplier (the "PAYS Works Charge"), which will represent the consideration for the supply of the PAYS Works. The Supplier would hold these amounts for the Administrator, as these payments will service the Administrator's debt under the Loans. The Supplier's obligations to pass through repayments under the Loans would be consideration for the Administrator's procurement of the PAYS Works.
The PAYS Works Charge would be invoiced to the Consumer via the water supply bill which the Consumer receives from the Supplier and paid at the same time as the general water bill.

Legal Considerations for a Water Company Charge

COMPLAINTS AND ENQUIRIES
The 3rd party finance vehicle (Administrator) would be responsible to the Customer and the Supplier for the performance of the works. Contractual arrangements would need to be put in place between the Administrator and the Internal or External Contractor who performs the Energy Efficiency Works placing ultimate liability for underperformance of these works with the contractor.
Any claims in respect of rebate, allowance or set off against the PAYS Works Charge made in the Consumer's electricity bill would have to be agreed and settled directly between the Consumer and the Supplier. The Supplier would then have a right to set off the associated costs against trust monies owing to the Administrator. The Supplier would wish any water related charges to be ring-fenced from any set off etc. This would likely require new regulations
The Consumer would agree under the Energy Services Agreement that under no circumstances is it entitled to withhold payment of the PAYS Charge itemised in its water bill for any period of occupation or responsibility (in the case of a landlord), save in respect of any manifest error in the way in which it has been calculated.

CHANGE OF CONSUMER / SUPPLIER
The PAYS Agreement would have to contain provisions allowing the for the assignment of the Consumer and Supplier role, to new occupants of the premises containing the PAYS Works, and to new suppliers elected by the Consumer respectively in a similar way to the way in which charges for water supply are currently addressed upon change of occupier.
If the Consumer moves from the premises which benefited from the PAYS Works:

- they will have a duty under the Energy Services Agreement (and through various conveyancing standard forms) to inform the Supplier of the name of the new owner or occupier and, if not resident at the premises, the new owner or occupier's address prior to the new owner or occupier taking ownership or possession of the premises; and
- they could be required to remain liable for the Energy Efficiency Works Charge until such time as the Supplier receives an assigned copy of the Energy Services Agreement signed by the new customer. However, such a requirement risks creating a barrier to deployment.

CURRENT LEGISLATION AND NECESSARY AMENDMENTS

The present legislative framework would not allow a Supplier to fix, or subsequently demand and recover a PAYS Charge in connection with the envisaged low energy works. The Proposal would therefore require significant legislative and regulatory change, which would have to be approved by the Houses of Parliament, the Department of Environment Food and Rural Affairs and Ofwat.

The current power of water companies to fix, demand and recover charges for their services is contained in s142(1) of the Water Industry Act 1991 (the "WIA"). This allows for the fixing, and subsequent demand and recovery of charges in respect of services provided in the course of carrying out any of the company's "functions" under or by virtue of any enactment (being any enactment contained within the Act or any statute subsequent to it). The scope of these "functions" is limited to 'water centric' activities at present. Section 142(5) clarifies that nothing in s142 of the WIA shall affect water company's powers to fix charges conferred otherwise than by virtue of this part of the WIA.

Therefore, in respect of current legislation, the Proposal would require a new Act of Parliament be passed containing provisions which entail that either:

- the "functions" of water companies (in respect of their s142(1) power) include the provision of PAYS Works to customers; i.e. the WIA is amended by the inclusion of a provision stating that this is a function of water companies (the "Amending Act Route"); or
- water companies are given a new power to fix, demand and recover charges in respect of PAYS Works (a "New Powers Act Route").
- Section 142(2) of the WIA provides that the power in s142(1), other than for the supply of water and sewerage services to residential customers, must be exercised in accordance with agreements with the person to be charged. The power to charge for supply of water and sewerage services to the residential sector must be exercised in accordance with a charges scheme under s143 of the WIA. If the Amending Act route was pursued, this would allow for the PAYS Agreement as envisaged by the scheme. If the New Powers Act Route was pursued, the new power could simply be expressed to be exercisable in accordance with the proposed outline for an energy services relationship. The New Powers Act Route seems the most appropriate option unless the energy efficiency roles were intended to be mandatory for companies.

The full details of the proposal could then either be contained within the new Act (though this would be more problematic if pursuing the Amending Act Route), or a power be given to the Secretary of State within any new Act to draw up a Statutory Instrument fleshing out this detail.

OTHER NECESSARY CHANGES

Water suppliers are heavily regulated by virtue of the industry's structure, and the current licences under which they are appointed by the Secretary of State would likely also require amendment in conjunction with the proposal. The industry regulator Ofwat is likely to require that licence controls be placed on companies in respect of any new charging powers in connection with PAYS Agreements, as is currently the case in respect of standard charges. The relevant sections of the WIA for licence modification are ss11-17R.

Sections 11 and 17G of the WIA on the power to impose conditions state that any conditions the Secretary of State or Ofwat believe to be requisite or expedient may be included within the licences, having regard to their duties under Part I of the WIA. Sections 11(2) and 17G(2) clarify that conditions may be included by virtue of this general power 'whether or not they are connected with the supply of water, the provision of sewerage services or the exercise or performance of any power or duty conferred or imposed by or under any enactment on water undertakers or sewerage undertakers.'

Subject to a power of veto by the Secretary of State of certain proposed modifications, Ofwat may modify the conditions in the licence with the consent of the water company concerned. Before making the modifications, Ofwat must publish notice of the proposed modifications as part of a consultation process, giving third parties the opportunity to make representations and objections for a minimum of 28 days from publishing proposals which Ofwat must consider. This notice must be published in such manner as Ofwat considers appropriate to bring this to the attention of persons likely to be affected by the proposals, and a copy passed to the water company involved and the Secretary of State.

The draft Floods and Water Management Bill published on 21 April 2009 provides for a collective modification regime whereby Ofwat can make changes to all standard licence conditions of appointment of water service companies where a certain proportion of the companies (to be specified in an order) agree to the change, though the Bill is still subject to consultation.

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