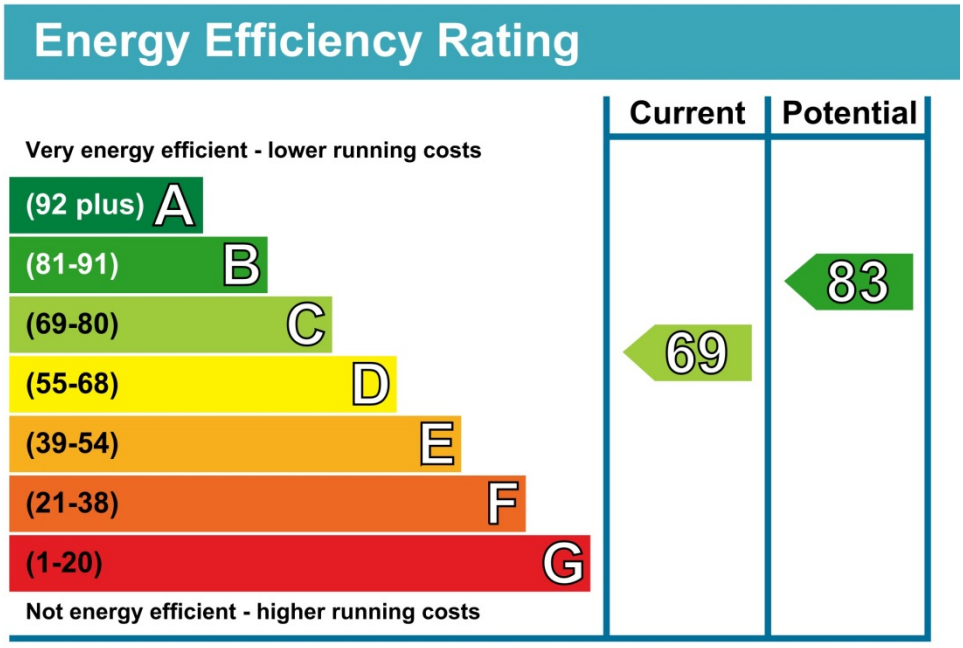
WILLMOTT DIXON
ENERGY SERVICES

Giving home energy efficiency a 'nudge'

A Home Energy Adjustment to Stamp Duty Land Tax



Paper developed for UKGBC Incentives Task Group,
David Adams (Willmott Dixon), Steven Heath (Knauf Insulation), Rory Bergin (HTA)
Original paper: May 2013
This version: Feb 2016

CONTENTS

1. Introduction

A home, low energy, retrofit revolution could be a real proposition. The question is what is the trigger?

Making a home low energy: protects against fuel poverty and ill health associated with cold, creates local installation jobs / UK manufacturing (mostly), reduces the import of fuel and reduces carbon emissions. It is an investment now, paid back through savings which equally benefits small and large companies and is scalable immediately.

Simply put, home energy efficiency is the perfect economic stimulus.

However rational, experience shows householders are reluctant. Green Deal, had its strengths and weaknesses but was simply a quality assured funding mechanism and it was wishful thinking to assume it would also drive take up at scale. There is a market failure.

Householder fuel bills are regularly in the press and the subject of political statements. With declared energy supplier's profits at circa 5% the opportunity for society, as a whole, to make energy bill savings through switching must be limited.

The most powerful opportunity for mitigating high bills is to choose a more energy efficient property or undertake low energy improvement. Reductions of up to 50% are possible and this really does apply to most homes.

2. How Nudging Stamp Duty Land Tax works:

1) A home's energy performance is determined at the point of sale by the Energy Performance Certificate (already a requirement) producing an Energy Efficiency Rating (already exists).

2) The basic SDLT is calculated based on sales value by the purchaser solicitor (already a requirement)

3) The purchasing solicitor logs the property purchase price and EPC URN into secure web based tool which calculates the 'Adjusted SDLT' by applying -X% per Energy Efficiency Rating point above a HMRC announced level or X% per point below this level. Where the value ranges from 0.4% to 2.0% depending on the SDLT band.

4) Stamp Duty is paid to the treasury (as now)

5) Any HMRC audit processes consider both the sales value evidence and EPC, which is lodged in a national database (already exists) to confirm calculations are correct.

6) If the purchaser undertakes low energy measures within the first 12 months and obtains an updated EPC they can log back onto the secure web tool using their unique ID, enter the updated EPC URN and request the rebate which is automatically calculated for HMRC approval (new mechanism). Householders who purchased a property below the SDLT threshold would also be able to apply for a 'rebate' should they: improve the property within 12months or purchase one with a SAP rating above the neutral point.

7) HMRC announce the Energy Efficiency Rating neutral point each year, which reflects actual and anticipated improvements, within the 12months, in the national housing stocks energy efficiency to ensure that HMRC never lose out.

3. Benefits and disadvantages

- There is a strong political narrative which is 'reasonable'
- The nudge only applies when a decision is being made so there is a choice
- Progressive - naturally reflects the ability to pay: lowest cost homes only benefit, high cost homes pay more / save more.
- There is a natural 'soft start', circa 900,000 properties pa (current sales) and naturally phases out over time.
- Revenue neutral to the treasury and structured to ensure this continues irrespective of how fast the housing stock's energy efficiency improves
- Winners – choosing a more energy efficient home results in slightly less SDLT but with disproportionate irrational tax avoiding 'joy'
- Losers – those choosing a less efficient home pay slightly more SDLT with disproportionate, irrational, 'irritation' stimulating action.
- Losers already have accepted annually higher fuel bills so have little justified complaint if the SDLT is slightly higher (and in many cases less than the amount they are already electing to pay extra on fuel – every year).
- Likely to start to be reflected in house prices which most householders are sensitive to even if they have no intention to move increasing the number of those 'nudged'.
- Most of the process elements already exist and all of the necessary data is already being collected so straightforward to deliver
- By stimulating demand for low energy measures the costs of delivering the Energy Company Obligation (ECO) reduces, lowering householder energy bills

Perceived concerns	…which are actually further benefits
Doesn't drive take up in ***all*** homes from start	- Provides a softer, easier to accept start - The extent of the energy performance data, the EPC, is growing but only covers circa 25% of all homes. The SDLT approach uses data that is already generated for a home when it is marketed
Doesn't apply to all homes	- Doesn't impact tenants in rented properties where other policies already exist to drive landlord action - Lowest cost homes, where householders may not have the financial capacity to undertake improvement works, receive a benefit for acting but no additional charge if they don't.
Only applies when someone moves	- The impact is at a point where the prospective purchaser is making a decision ie there is choice, moving energy considerations up the agenda - Many home improvements occur in the first 12months of ownership, the SDLT rebate allows the new owner to benefit from improvements made in this period through the rebate. - Many homeowners are aware of house prices and this informs decisions they make, such as replacing kitchens or renovation, whether they intend to move soon or not - Suspicion of government means householders will tend to assume that the nudge factor will increase over time so they might as well undertake low energy work sooner and get the benefit as well?
Could negatively impact a delicate housing market	- SDLT is only nudged up / down by a relatively small amount. The actual financial consequence is modest with the driver more psychological than directly fiscal. It is intended that a

	question is triggered in the minds of potential purchasers to advantage the more energy efficient homes. The level of nudge can start modestly and be increased in time if appropriate.

'Real' Disadvantages

However reasonable, well designed and well presented this is a change in tax which requires leadership.

4. & Answers

4.1 Will HMRC lose money?

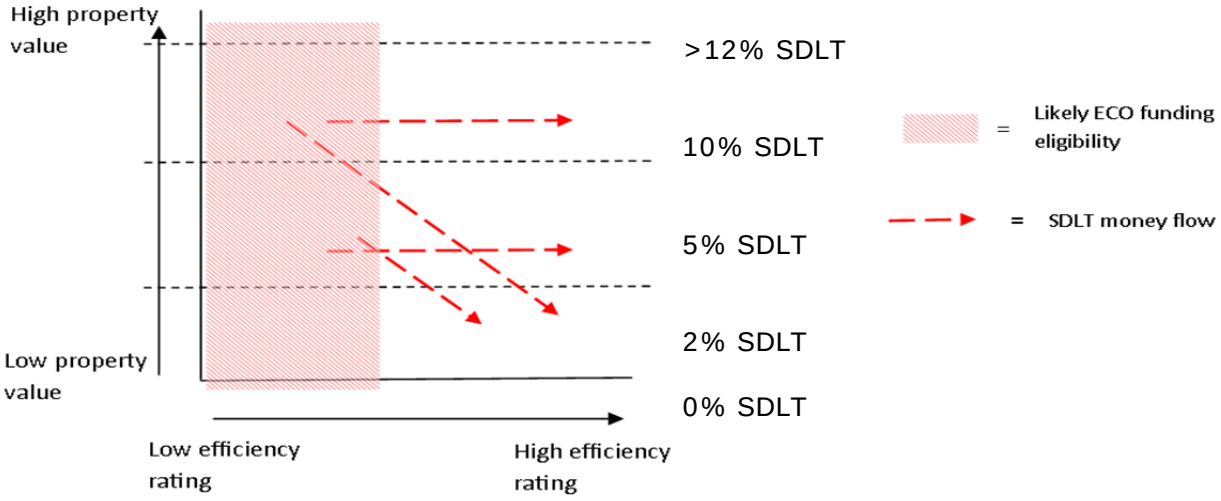
No. By assessing the neutral point annually the HMRC have the necessary levers to ensure revenue neutrality is maintained on an on-going basis.

4.2 Who loses & who benefits?

Those properties that are of highest value but least energy efficient would lose out – if they failed to act on improving their properties. Conversely, those properties that are most energy efficient in these bands would benefit. The energy efficiency nudge is progressive as the absolute additional cost / benefit increases with the level of SDLT paid.

Properties in the 0% SDLT band are exempt from additional charge if the property falls below the set SAP neutral point. However, those who buy properties above the SAP benchmark and those that have improved the energy efficiency within 12 months would still be able to claim the rebate. The cost of this is absorbed when setting the neutral point and effectively funded by the inefficient properties that pay SDLT.

Money flows are illustrated below, overlaid with the properties which are most likely to attract the Energy Company Obligation (ECO) subsidy. It shows that those that are most negatively impacted are also most eligible for ECO subsidy of low energy improvement measures.



Key to understanding the driver behind the incentive is to remember that where a property falls below the benchmark SAP rating and a charge is imposed, the amount should not be excessive but should act as a red flag to the property purchaser that this property will be more expensive to run. Cost is not only at property purchase stage but built into rising property operating costs.

For those at the 0% SDLT band the driver remains by rewarding the purchase of a more energy efficient homes.

4.3 Will the incentive migrate money from low value homes to higher value?

No, as it is revenue neutral the money flows are likely to move within SDLT bands from energy inefficient homes to energy efficient ones. There will be some money flow from energy inefficient properties paying SDLT to energy efficient properties in the 0% band. Over time, if higher value homes are improved at a much higher rate than the average of the stock, band specific neutral points may be introduced to ensure that money does not start flowing to higher value homes.

4.4 Will the incentive negatively impact those in fuel poverty?

As the nudge is only applied at the point of sale, those already within a property are not negatively impacted. Nudging SDLT does not make a fuel poor household's condition worse but does mean that prospective purchasers have their attention drawn to the energy use of a home prior to purchase helping to prevent householders inadvertently taking on a property where the fuel cost implications had not be considered and later found to be a problem. Ultimately householders in fuel poverty need financial assistance to improve their property so actions to raise awareness of the risk, in advance and at a key decision point, are helpful.

4.5 Will the incentive migrate money from rural areas to urban?

This question is better expressed as; will a disproportionate burden be placed on off-gas grid properties and solid walled properties which are likely to have a lower SAP rating than on-gas grid and cavity walled properties? To a degree the answer is yes however there is a greater drive to improve these properties both for a wider social benefit and for the benefit of those living in the properties and having to manage disproportionally high and ever increasing energy bills.

Indeed, this is why the ECO supplier obligation subsidy is due to target the fuel poor. The ECO effectively migrates money from all UK householders to the least energy efficient / low income homes.

The fuel poverty slant on ECO will tend to advantage low income householders in off gas grid properties with lower SAP values so the combination of SDLT EE nudge and ECO is unlikely to disadvantage rural properties.

4.6 Will the incentive migrate money from poorer areas to wealthy?

As above, removing the 0% SDLT band properties from making any payments will stop property purchasers in poor areas being penalised while allowing them to claim rebate for; purchasing properties above the SAP benchmark or improving properties which fall below the benchmark. Taking either action will reduce their home operating costs.

There will be a gradual migration of money to areas where a greater number of new homes are built given these homes will typically have higher SAP ratings. However, the cost of this will primarily be carried by higher value energy inefficient homes; the owners of which will likely be eligible for support from other energy efficiency schemes such as described above.

Whilst higher cost properties have potential greater gains they also have greater potential SDLT costs for the least energy efficient. In order to be seen to be fair, it is proposed that the most expensive properties have a limit placed on the rebate / discount that they are able to realise of say £10,000. Should different SDLT bands have materially different neutral axis which impacts the money flows then there is no additional complexity having each SDLT band having its own neutral point.

4.7 Will the incentive migrate money from the elderly to the rest of society?

No, SDLT is paid by the purchaser not the vendor. Anyone choosing to downsize is likely to have a high degree of equity in their property. Whether they choose to buy in the 7% to 1% or 0% SDLT banding, they will be made aware of the benefits of buying a more energy efficiency house at the time of purchase and financially rewarded for doing so both through the SDLT incentive and continue to be rewarded through lower bills. This second reward will favour the elderly demographic disproportionally given higher home occupancy and generally higher room temperature requirements.

If the mechanism embeds itself, there is likely to be a knock on impact on house prices linked to the level of a property's energy efficiency. Given the SDLT incentive will be relatively small (i.e. not punitive but a nudge to take action), the knock on impact is likely to start to be material but not represent a significant percentage of the property's value. Those with a high level of equity in their property would then see only a very modest impact in relative terms when they downsize.

4.8 Will the incentive migrate money from large families to the rest of society?

Only where the property they purchase falls within the 1% or 3%+ SDLT bands and the family is moving to an energy inefficient home. As with the elderly, families should be made aware both of the SDLT charge for energy inefficient homes but also the higher operating cost of high occupancy profiles such as young families. Awareness of the charge will allow a family to judge whether to go ahead with the purchase and whether they access the various support mechanisms to refurbish the property or choose to pay the higher costs.

4.9 Would those that are stretching to afford a mortgage be penalised by increased SDLT?

In many ways, for those that are stretching to afford a mortgage, it is even more important that the implications of the energy efficiency of the proposed home are considered seriously. Relative to typical fuel costs the additional potential cost of the SDLT is relatively modest for lower priced homes. If a householder is unable to afford the additional SDLT due to the poor energy performance they may well also be unlikely to afford the fuel bills of the property.

4.10 Why is property sale an appropriate time to retrofit the home?

The time of property sale and soon after is the ideal time to install the maximum number of measures most cost effectively and for greatest impact on the energy efficiency rating of a property.

In brief:-

- The loft is empty or less cluttered for loft insulation
- The new homeowner may be considering painting and decorating so ideal time for floor insulation, internal or external wall insulation, party wall insulation and new heating system
- They may be considering double glazing which again is the perfect time for internal or external wall insulation
- By undertaking works in the first 12 months of moving in the householder has the maximum time in the property to enjoy the benefits

4.11 Will a relatively small SDLT tax incentive prompt people to improve their homes?

The time of property sale and soon after is the ideal time to have the conversation with home owners about improving their property given most home improvement happens between 6 weeks and 6 months after purchase.

Refurbishment also goes on prior to putting a property on the market to ensure a swift sale and maximum sale price. While energy efficiency is not seen as a factor in property price, that refurbishment will not include energy efficiency retrofit.

A significant current barrier to action is a very real disincentive for estate agents and even Domestic Energy Assessors producing the Energy Performance Certificate (often employed by the estate agent) to have a conversation about a home's energy efficiency as they act for the seller. Where they do speak to the purchaser, they do not discuss a cost for property improvement the purchaser does not immediately see as this may become a reason to negotiate down the purchase price. Any further negotiation could either put the sale itself at risk or reduce the sale price and the estate agent's commission.

The incentive described in this paper would spin this situation on its head and incentivise estate agents to up-sell energy efficiency measures. There is a market for insulation and heating system lead generation and estate agents and Domestic Energy Assessors should and could be key players in it. Any risks of miss-selling are reduced as long as the Energy Performance Certificate is robust as measures would be tied to this.

In summary, an SDLT incentive linked to energy efficiency will impact on the behaviour of the; property seller, property buyer, estate agent, domestic energy assessor, energy efficiency measure supply chain and financial advisors.

Where householders have capital, extend their mortgage, other financing routes and, as available, they will likely be more willing to pay for costly measures at this time than any other since this will be the time of their longest occupancy in that property and therefore their greatest chance of realising maximum payback.

4.12 Will listed homes, where energy efficiency measures may be more complex, be disadvantaged?

Nudging the SDLT up and down draws attention to the on-going energy cost implications. Since January 2013 an EPC is no longer required for a listed home. The reasoning being that the current EPC is not a sufficiently nuanced energy performance assessment and the recommendations too generic. As an alternative for these properties, a SAP score could be 'deemed' (be it the neutral point or below) if a specialist energy report is provided, assessed by an expert on listed properties, providing detailed energy performance analysis and tailored recommendations. The householder would still be able to take advantage of a reduced SDLT or the rebate should they wish but then an EPC would still be required.

4.13 What are the precedents for such an approach?

The closest precedent is fiscal incentives used to encourage low vehicle emissions in specifically the graduated Vehicle Excise Duty (VED) and company car tax reform.

A key learning, particularly relevant to the SDLT nudge proposal, is that the structure should allow routine recalibration such that energy efficiency improvement do not result in the cost / benefit becoming out of balance. The emissions reductions of vehicles experienced and anticipated are expected to result in a significant reduction of HMRC

revenue take per vehicle – much greater than anticipated. Understandably, this is causing significant concerns within HMRC. The annual setting of the neutral point, determined by the home Energy Efficiency Rating data which will be received during the course of the year coupled with a factor accounting for the anticipated improvements in the forthcoming 12 months, ensures that no overall SDLT loss or gain will occur. A similar proposal has been made for setting a CO2 pivot point, recalibrated annually, for VED to ensure the revenue take remains constant as the average emissions fall[1].

Indeed the whole energy efficiency nudge SDLT policy is self-extinguishing. As the energy efficiency rating of the whole stock improves the difference between a highly energy efficient home and the average closes and ultimately becomes the same. This also has the helpful effect that unimproved homes become increasingly 'nudged' as the neutral point rises. This effect could be further increased over time should this be felt necessary by increasing the 'nudge %' from 0.5%.

It is difficult to disaggregate the extent of the separate impacts of increased fuel price and non-fuel taxes as motivators for more efficient cars. Fuel costs are often less of an influence with company cars and the company car tax experience suggests that tax can be powerful nudge. The HMRC assessment study in 2006 calculated that average emissions fell by 15g/km (circa 8%)[2], by 2004 due to the company car tax reform introduced in 2002. By 2009 the fall was circa 22%[3]. Another example is in the Netherlands where, in 2002, a rebate of €500 to €1000 was offered on the purchase of lower emissions vehicles. This led to their market share increasing from 9.8% to 19.3% in one year[4].

4.14 How might this policy be presented?

- The vast majority of people are concerned by some or all of: high home energy bills, increasing fuel poverty, energy security and climate change – they are concerns for society as a whole.
- At an individual level, when purchasing a home, energy efficiency is rarely a decision factor even though householders are substantially locked into a future fuel bill commitment
- Adjusting SDLT, based on energy efficiency, provides a nudge at a critical decision point
- There is no cost to the tax payer / treasury even as the housing stock improves.
- The £1.3bn ECO subsidy, FIT and RHI are available to support many low energy measures
- The householder pays less SDLT than today in low energy home
- Those that pay more 'one off' SDLT already accept paying higher future energy bills annually and if you improve your home within 12 months then you would qualify for a SDLT rebate.
- To provide time for householders to undertake low energy measures, if they have not previously done so, the policy is enacted 1 year after becoming law.
- By tackling the underlying cause of fuel poverty and energy insecurity we are reducing the need for future subsidy support and reducing the investment required in new energy sources

[1] Cutting emissions and making car cheaper to run. Centre:Forum Tim Leunig 2012
[2] Report on the evaluation of the Company Car Tax Reform: stage 2, HMRC 22 March 2006
[3] Using data from EST Fleet Briefing Feb 2010
[4] King Review of Low carbon cars Part 2 recommendations for action, 2008

4.15 How could this be made easy for conveyance solicitors and HMRC?

A web or based tool or App where the selling price and current Energy Efficiency Rating are entered and the results displayed automatically using the current 'neutral point' and SDLT bands. The same web site is used to claim SDLT rebate once the works have been undertaken as demonstrated by an updated EPC.

4.16 How would you explain this to consumers?

Message:

- The higher the energy efficiency the lower the stamp duty paid
- More energy efficient than the average home you pay less than today and vice versa
- *Any* recognised improvement in a home's energy efficiency *will* reduce the SDLT paid[5]
- The existing web based EPC Advisor tool allows the householder (or prospective householder) to scenario check the SDLT to be paid / rebate available if the suggested low energy works are undertaken within 12 months of moving in.

[5] True if Energy Efficiency Rating approach is used. Less straightforward if using Energy Efficiency 'Bands' because measures may, or may not, result in a change of bands as these are quite wide. A benefit is dependent on the size of the improvement and whether the starting point is at the top or bottom of a band.

5. Illustrative examples

Below are a range of examples illustrating the SDLT currently paid when a property is purchased and that could be paid under the proposed system of 'nudges'.

SAP Neutral point = 63, Maximum reduction / rebate = £10,000

Properties with a value below £125K are not required to pay SDLT. In order to encourage energy efficiency improvements within this sector home purchasers of homes with a SAP rating better than the neutral point, and those that had improved their homes within 12months of sale, would be able to claim the SDLT Home Energy Bonus.

Following an improvement the minimum bonus is £20/SAP Point

Examples:

New 1 bed mid floor flat

Agreed selling price	£105,000	
SDLT Band	0%,	nudge factor 3%/SAPpoint
Today's SDLT paid	£0	
EPC	85B	(2010 Building regulations)
Adjusted SDLT paid	£0	Bonus of £1,040 able to be claimed

Existing 1 bed mid floor flat

Electrically heated with original storage heaters and few low energy lights

Agreed selling price	£120,000	nudge factor 3%/SAPpoint
Current SDLT paid	£0	
EPC	73C	
Adjusted SDLT paid	£0	+ Bonus of £540 able to be claimed

If within 12 months of purchase the new householder installed more energy efficient fan assisted storage heaters and 100% low energy lights improving the SAP to 82B then a further **bonus of £180** could be claimed.

An improved 1 bed mid floor flat

Electrically heated with energy efficient fas assisted storage heaters and 100% low energy lights, other details as above

Agreed selling price	£120,000	
SDLT Band	0%,	nudge factor 3%/SAPpoint
Current SDLT paid	£0	
EPC	82B	
Adjusted SDLT paid	£0	+ Bonus of £1,026 able to be claimed

A typical 1970's 3 bed semi

With D rated boiler, no cavity wall insulation partial double glazing

Agreed selling price	£150,000	nudge factor 3%/SAPpoint
Current SDLT paid	£500	
EPC	55D	
Adjusted SDLT paid	£620	+£120, +24%

If within 12 months of purchase the new householder installed: cavity wall insulation, a new boiler and topped up the loft there would be an improvement of the energy performance to a SAP 71C a **rebate of £320** could be claimed.

An improved 1970's 3 bed semi

Cavity wall insulation, a new boiler and full loft insulation, other details as above

Agreed selling price	£150,000	nudge factor 3%/SAPpoint
Current SDLT paid	£500	
EPC	71C	
Adjusted SDLT paid	£340	-£160, -32%

New starter home

Agreed selling price	£199,000	nudge factor 3%/SAPpoint
Current SDLT paid	£1,480	
EPC	85B	(2010 Building regulations)
Adjusted SDLT paid	**£992**	**-£488,** -33%

1970's 4 bed detached

E rated boiler, no cavity wall insulation and partial double glazing

Agreed selling price	£280,000	nudge factor 2%/SAPpoint
Current SDLT paid	£4,000	
EPC	55D	
Adjusted SDLT paid	£4,640	+£640, +16%

If within 12 months of purchase the new householder installed cavity wall insulation a new boiler improving the SAP to 65D a **rebate of £720** could be claimed.

An improved 1970's 4 bed detached

Cavity wall insulation, a new boiler and other details as above.

Agreed selling price	£280,000	nudge factor 2%/SAPpoint
Current SDLT paid	£4,000	
EPC	65D	
Adjusted SDLT paid	£3,920	-£80, -2%

1930's 4 bed semi, electrically heated

Solid walled and partial double glazing, poor energy efficiency

Agreed selling price	£289,000 nudge factor 2%/SAPpoint	
Current SDLT paid	£4,450	
EPC	30F	
Adjusted SDLT paid	£7,387	+£2,937, +66%

If within 12 months of purchase the new householder installed solid wall insulation, closed off the open chimneys, fitted low energy lights, topped up the loft improving the **SAP to 61D** a **rebate of £2,759** could be claimed.

Improved 1930's 4 bed semi, electrically heated

Solid wall insulation, closed off the open chimneys, 100% low energy lights, full loft insulation and other details as above.

Agreed selling price	£289,000	nudge factor 2%/SAPpoint
Current SDLT paid	£4,450	
EPC	61D	
Adjusted SDLT paid	£4,628	+£178, +4%

New 4 Bed Home

Agreed selling price	£465,000	nudge factor 2%/SAPpoint
Current SDLT paid	£13,250	
EPC	84B	(2010 Building regulations)
Adjusted SDLT paid	£10,468	-£2,783, -21%

Victorian 2 bed partially detached, 3 storey, London

Solid walled and single glazing with a high performance boiler

Agreed selling price	£579,000	nudge factor 1%/SAPpoint
Current SDLT paid	£18,950	
EPC	45E	
Adjusted SDLT paid	£22,361	+£3,411, +18%

If within 12 months of purchase the new householder installed internal wall insulation, with new heating controls and draft stripping improving the **SAP to 63D** a **rebate of £3,411** could be claimed.

An improved Victorian 2 bed partially detached, 3 storey, London

Internal wall insulation, with new heating controls and draft stripping and other details as above

Agreed selling price	£579,000	nudge factor 1%/SAPpoint
Current SDLT paid	£18,950	
EPC	63D	
Adjusted SDLT paid	£18,950	£0, 0%

1930's large detached, Knowle

Solid walled and single glazing with a high performance boiler

Agreed selling price	£799,000	nudge factor 1%/SAPpoint
Current SDLT paid	£29,950	
EPC	38F	
Adjusted SDLT paid	£37,438	+£7,670, +25%

If within 12 months of purchase the new householder followed the EPC recommendations, including PV, solid wall insulation and a new boiler improving the SAP to 80 the maximum **rebate of £10,000** could be claimed.

Improved 1930's large detached, Knowle

Insulated solid walls and double glazing and other details as above

Agreed selling price	£799,000	nudge factor 1%/SAPpoint
Current SDLT paid	£27,404	
EPC	80B	
Adjusted SDLT paid	£29,084	-£2,546, -9%

Victorian large semi-detached, Oxford

Solid walled and single glazing with a high performance boiler

Agreed selling price	£2,750,000	nudge factor 1%/SAPpoint
Current SDLT paid	£243,000	
EPC	40E	
Adjusted SDLT paid	£271,781	+£28,031, +12%

If within 12 months of purchase the new householder followed the EPC recommendations, including PV, solid wall insulation and a new boiler improving the SAP to 70C the maximum **rebate of £10,000** could be claimed.

Improved Victorian large semi-detached, Oxford

Insulated solid walls (internally) with secondary glazing and PV and other details as above

Agreed selling price	£2,750,000	nudge factor 1%/SAPpoint
Current SDLT paid	£243,000	
EPC	70C	
Adjusted SDLT paid	£239,484	-£4,266, -2%

6. Design Details

6.1 Introducing the SDLT Nudge

Preparation

- Design of the secure website to accept basic property details, the agreed sales price and a lookup for the SAP rating using the SAP URN (existing) from the Landmark database (existing)
- Communications with conveyancing solicitors to explain the policy and implications
- General communications with estate agents and public explaining the policy

Year 1

- Conveyancing solicitors required to enter details into the database but SDLT calculation is not impacted
- HMRC calculates the SAP neutral point (see below)

Year 2

- SDLT neutral point and SDLT Nudge factor is announced
- SDLT nudge goes live for all new purchases of homes and the SDLT is adjusted based on the energy efficiency of the home

6.2 Web based calculation & rebate generation

In order to minimise processing costs and maximise accuracy a secure web based tool could be developed to calculate the level of SDLT and generate the SDLT Energy Efficiency Rebate.

At point of sale:

Person	Action	System action
Conveyancing solicitor	log into the secure site	
	Enter the EPC reference number	Look up and display the EPC information from the landmark database (existing)
	Check and confirm property basic details	Register confirmation
	Entre the property selling price	Calculate the basic SDLT and the energy efficiency adjusted SDLT
	Print details for: File, Purchaser	Generate a PDF with: the house details, SAP, unique SDLT EE reference number (URN), instructions for claiming the rebate, and the expiry date
Purchaser	Retain the printed details with the other property sales documents	

After low energy works:

Person	Action	System action
Domestic energy assessor	Produce and lodge a new EPC (already required for ECO and GD works)	
Purchaser (now the home owner)	login to the secure site	
	Enter the address and SDLT EE Rebate URN	
	Entre the EPC URN	- Look up the old and the new EPC and compare. - Adjust the calculation if different SAP versions used - Calculate the rebate using the most current HMRC parameters
	Indicate the EE measures undertaken (tick box)	Used as an audit sense check
HMRC	Authorise payment	Auto generate rebate cheque Send cheque
		Trigger EPC audit as required

6.3 Calculating the SAP Neutral Point

The SDLT Neutral point is calculated taking to account a number of factors:

- Previous years SAP scores obtained from the web portal (including updated EPC rebates)
- Anticipated increase in SAP scores expected in next 12 months (linear, based on experience of previous 12 months)
- The costs of rebates for properties below the SDLT threshold
- Running costs of the EE Rebate web portal
- Revenue loss / gain from previous 12 months
- Costs of additional audits

The data collected via the web based tool provides all the information to be able to undertake these calculations on an on-going basis.

Should the rate of energy efficiency improvement increase in a particular year and the revenue take is, across all transactions, low than it would otherwise have been then this would be reflected in the setting of the neutral axis in the subsequent year allowing recovery of any shortfall.

6.4 Calculating the SAP Nudge Factor

Previous years SAP scores and sales prices obtained from the web portal coupled with the extent of progress made and level of 'nudge' desired can be modelled to determine the appropriate nudge factors.

For the examples quoted the following has been used:

Nudge Factor		SDLT Band		SDLT		Properties sold in 2011 (0,000)
Below neutral point	Above neutral point	from	to			
2.0%	1.00%	£ -	£ 125,000	0%		238
1.8%	0.90%	£ 125,000	£ 250,000	2%	£ -	423
1.3%	0.65%	£ 250,000	£ 499,999	5%	£ -	162
1.0%	0.50%	£ 500,000	£ 925,000	5%	£ -	38
0.6%	0.30%	£ 925,000	£ 1,500,000	10%	£ -	4
0.5%	0.25%	£ 1,500,000	>	12%	£ -	1
					£ -	869

For SAP points above the SAP Neutral Point the 'nudge factor' is reduced by half. This is to nudge, but not disproportionately incentivise, new homes and the addition of solar panels.

6.5 Prevention of fraud

Whilst the approach for the energy assessment for homes has been strengthened, with the changes brought in with the introduction of Green Deal and the financial recommendations to householders that result, some additional requirements and auditing *may* be required:

- On-site independent audit of an increased proportion of 'for sale' assessments, and those for rebates, for every assessor with any inconsistencies reported to the certification body
- On-site independent audit of a significant proportion where a significant rebate is applied for.
- Certification body to report all inconsistencies to HMRC

No improvements to the Standard Assessment Procedure (SAP) are required but the evidencing requirements for assessors choosing to use bespoke, rather than default, values would need to be clarified and potentially strengthened.

6.6 Coping with changes in the SAP calculation methodology

At time to time SAP is updated. For rebate purposes, should the original energy assessment be undertaken on one version and after works the updated assessment be undertaken on a different version then the improvement may be incorrectly calculated. In such cases, the code making the comparison may be able to use the lig 16 file output to recalculate the original assessment using the new version of SAP before comparing outputs.