

# A housing market catalyst to drive carbon emission reductions

## Low energy adjustment to Stamp Duty Land Tax

## The Climate Change Committee has advised the UK Government that...

*“We will not meet our target for emissions reduction without near complete decarbonisation of the housing stock”.*

**This report shows how a low energy adjustment to Stamp Duty Land Tax can help create a market to deliver this.**

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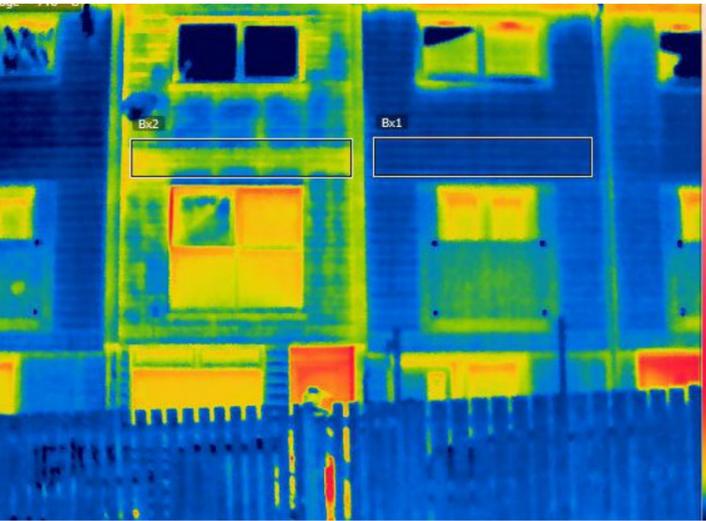
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# 1. Why?



Experience has shown that householders do not act without an incentive. A SDLT energy adjustment nudge would allow grant funding to be focused where it is most needed

The vast majority of the UK's privately owned homes are not energy efficient. More than half – 60% – are so poor that they have an EPC rating below C. With the UK now committed to reduce its net greenhouse carbon emissions to zero, the Climate Change Committee's (CCC) 2019 Net Zero report concluded that 'all building emissions would need to be entirely eliminated by 2050'. This is a huge undertaking. A big shift is needed to change behaviour, improve energy efficiency and switch to low carbon heat. However, the CCC analysis demonstrated that this was possible and confirmed this in its recent advice on the 6th carbon budget.

While policies are already in place for rented homes to improve to an EPC C by 2030 as part of the net zero journey, there are no such policies to start driving improvements in the 15.6m owner-occupied homes.

This is at odds with the CCC's 'balanced pathway' scenario for decarbonisation, which assumes that fabric measures will be installed in 7m owner-occupied homes and that 5m will have heat pumps by 2033. In addition, the Climate Change Committee recommends that no homes should be sold with an EPC below C from 2028. This would equate to fabric energy efficiency measures being delivered at a rate of 650,000 every year and heat pump delivery ramping to a rate of c. 1.5m p.a. This is despite most of the energy efficiency 'easy-to-access low-hanging fruit' measures having already been addressed and heat pump installation currently running at only 30k per year. Ultimately, nearly every home will need to be retrofitted in one way or another.

Experience has shown that householders do not act without incentive. There is a market failure. While grants – such as the current Green Homes Grant Local Authority Delivery scheme and the upcoming Home Upgrade Grants – have an important role to play in driving consumer demand, we cannot rely on grant funding alone to create a long-term, self-sustaining market. In addition, the inevitable boom-bust delivery

cycle associated with grant schemes makes businesses inefficient, increases costs and drives down quality. Energy-adjusted Stamp Duty Land Tax (SDLT) would act as a long-term driver of consumer demand and would also allow grant funding to be focused where it is most needed.

Mandating improvements to owner-occupier homes through regulation is both politically challenging and potentially difficult to define, but will be necessary in the longer term to ensure certainty of outcomes. This needs to be signalled early.

Therefore, alongside grants in the near term and later regulatory requirements signalled early, there is a need for permanent, structural incentives to act. For example, how to encourage the house-buying market to start to 'value' a home's energy performance? How to stimulate the home-owning public to see a poor-performing home as a problem that must be tackled in the same way as a run-down house or an obsolete kitchen?

An energy adjustment of the SDLT calculation could catalyse and drive the market to deliver both energy efficiency improvements and low carbon heat and power. It would also be revenue neutral to HM Treasury. Grants could then be focused on early and ambitious adopters, supporting lower income households, accelerating scale-up and driving down costs, with financial products used to help those that are asset-rich yet cash-limited – against a backdrop of clearly communicated regulatory requirements on the horizon and driving towards market-led home decarbonisation at the scale and pace required.

Adjusting the SDLT both down and up when a home is purchased to reflect the energy and carbon performance stimulates the market and encourages householders to act. Typically less than 1% adjustment with a maximum of  $\pm 3\%$  of sales price, which is only 'finalised' 2 years after purchase, there is enough pressure to both drive and reward action but not so much as to shock the market.

It's not just about carbon. Making a home low-energy protects against fuel poverty, prevents ill-health associated with cold weather, creates local installation jobs, boosts UK manufacturing, reduces the import of fuel and reduces carbon emissions.

It is a long-term investment, paid back through savings. Market growth benefits small and large companies equally, is scalable immediately and applies across the country, and so is consistent with the 'levelling up' agenda.

Post- COVID, it is recognised that improving home energy efficiency and reducing emissions are the perfect economic stimulus – enabling the UK to 'build back better'.

Best of all, most of the elements for delivering a low energy adjustment of the Stamp Duty Land Tax already exist.

## 2. Attributes



- A nudge, not punitive
- Action after purchase is rewarded
- Revenue neutral to HM Treasury

- The SDLT adjustment is small enough not to prevent a sale, but large enough to encourage/reward action
- Stimulates house price differentials based on the dwelling energy demand and carbon emissions
- Stimulates the buyer to act to improve the home's performance, particularly in the first 24 months after purchase
- The final SDLT paid is finalised 2 years after purchase, and within that time home purchasers can claim a rebate for improvements made
- Protects sellers that are unable to improve their homes before sale
- Progressive – proportionate to the value of the home
- Revenue neutral to HM Treasury throughout the life of the policy
- Doesn't interrupt the sales process or prevent any homes being sold
- Uses existing mechanisms: Energy Performance Certificate, SDLT payment mechanism etc.
- Enhances the impact of proposed voluntary targets for mortgage lenders to improve the energy performance of their residential portfolios
- Works with the grain of the market, stimulating long term investment and innovation
- Is a possible prerequisite for, could work seamlessly with, and have its impact amplified by, the future introduction of Minimum Energy Efficiency Standards (or MEES plus carbon standards<sup>1</sup>), that are initially applied at the point of sale or post-purchase

<sup>1</sup> Private-rented sector MEES proposals currently being considered include the option of an Energy Efficiency Rating plus Environmental Impact Rating requirement.

## 3. Features and Benefits

Feature	Benefit
1 SDLT calculated in the usual way and then adjusted based on energy use and carbon emissions as calculated by the existing Energy Performance Certificate.	<ul style="list-style-type: none"> <li>• Straightforward to introduce.</li> </ul>
2 Progressively increases SDLT paid on homes with increasing energy use / carbon emissions; progressively reduces SDLT on homes that perform better than average.	<ul style="list-style-type: none"> <li>• Stimulates the housing market to value energy and carbon performance, encouraging homeowner action.</li> </ul>
3 The SDLT adjustment is proportionate to the value of the base SDLT.	<ul style="list-style-type: none"> <li>• Fairly encouraging / rewarding action for wealthy and less well-off alike.</li> <li>• Size of signal broadly proportionate to home upgrade costs.</li> </ul>
4 The final SDLT assessment is effectively made 24 months after the purchase, via a rebate, paid if energy / carbon performance measures are installed.	<ul style="list-style-type: none"> <li>• Purchaser is encouraged to act.</li> <li>• Seller may be incentivised to incorporate energy performance improvements in any works undertaken prior to sale.</li> <li>• Seller is not penalised if they are unable to improve their home before sale.</li> </ul>
5 A modest and proportionate bonus is paid to buyers that don't pay SDLT who have purchased a home with a better than average performance.	<ul style="list-style-type: none"> <li>• All home buyers are sensitised to the significant transformation that will occur in the housing market so that they can make informed decisions.</li> </ul>
6 Utilises the EPC's calculated energy demand and carbon emissions.	<ul style="list-style-type: none"> <li>• Fair and simple – homes with the lowest energy demand and carbon emissions have their base SDLT calculation reduced the most.</li> </ul>
7 'Neutral' point recalculated each year.	<ul style="list-style-type: none"> <li>• Ensures that the SDLT incentive remains revenue neutral throughout its life.</li> <li>• Not dependent on Government funding, so can be relied upon by industry as a basis for investment and innovation.</li> </ul>



## 4. How the home energy adjustment to Stamp Duty Land Tax could work

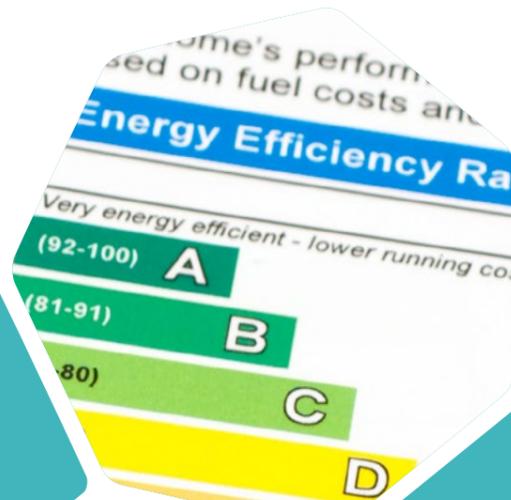
- 1 A home's energy performance is determined at the point of sale by the Energy Performance Certificate (EPC) – already a requirement in house sales.
- 2 The basic SDLT is calculated based on sales value by the purchaser's solicitor (already a requirement).
- 3 The purchaser's solicitor logs the property purchase price and EPC Unique Reference Number (URN) into a secure web-based tool (to be developed) which calculates the 'adjusted SDLT cost'. The basic SDLT value is adjusted up or down based on the energy demand and carbon performance of the home relative to a HM Treasury-set 'neutral' level.
- 4 New home builders that want to benefit from the Home Energy SDLT Adjustment would be required to register with a certified building performance body (to be established) to undertake as-built performance monitoring on 5% of their homes annually and publish the results in a prominent place.
- 5 The adjusted Stamp Duty is paid to HMRC by the conveyancing solicitor on behalf of the purchaser (as is the case now).
- 6 Any HMRC audit processes would consider both the sales value evidence and EPC, which is logged in a national database (already in place), to confirm calculations are correct.
- 7 If the purchaser undertakes low energy and carbon improvements within the first 24 months and obtains an updated EPC, they would log back on to the secure web tool using their unique ID, enter the updated EPC URN and request the rebate which is automatically calculated for HMRC approval (a new mechanism).
- 8 Householders who purchase a property which is not subject to SDLT would be able to apply for a SDLT Energy Bonus / Rebate should they either: purchase one with a SDLT rating above the neutral point (bonus, helping first time buyers into homes that are affordable to run) or improve the property within 24 months (rebate).
- 9 HMRC would announce the SDLT rating neutral point each year, which would reflect actual and anticipated improvements in the national housing stock's energy efficiency over 12 months to ensure that HMRC never lose out.

## 5. Illustrative examples



Accompanying this report is an illustrative [SDLT Energy Adjustment calculator](#), which includes over 60 examples. It is also possible to enter data for additional examples to calculate their SDLT. Shown in the table below are some of the assumptions that currently underpin the calculator, but these can be changed to steer the desired policy outcomes. On the following pages is a selection of typical examples.

SDLT energy adjustment rate 'Neutral Point' used	=	50
Max Space Heating kWh/m <sup>2</sup> for ANY SDLT Energy Adjustment Benefit	=	140kWh/m <sup>2</sup>
Max Space Heating kWh/m <sup>2</sup> for MAXIMUM SDLT Energy Adjustment Benefit	=	30kWh/m <sup>2</sup>



Home examples	SDLT energy adjustment rate SDLT paid SDLT Change v current % of selling price	Improved (within 24 months)	
		Low energy work	Rebate due to homeowner % of selling price
<b>Typical 1970's 3 bed</b> £285,000 	SDLT Energy Adjustment Rate = 46 £4,879 +£629 +0.2% Ref #24	New rate = 51 Cavity wall insulation & new windows	£680 -0.0%

<b>Cottage</b> £400,000 	SDLT Energy Adjustment Rate = 35 £15,053 +£5,053 +1.3% Ref #18	New rate = 51 Internal wall & room-in-roof insulation	£5,128 0.0%
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<b>Flat</b> £695,000 	SDLT Energy Adjustment Rate = 50 £24,852 +£102 -0.0% Ref #56	New rate = 65 Air source heat pump (ASHP)	£5,764 -0.8%
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<b>Detached house</b> £550,000 	SDLT Energy Adjustment Rate = 18 £33,785 +£16,285 +3.0% Ref #28	New rate = 34 Cavity wall & loft insulation	£8,164 +1.5%
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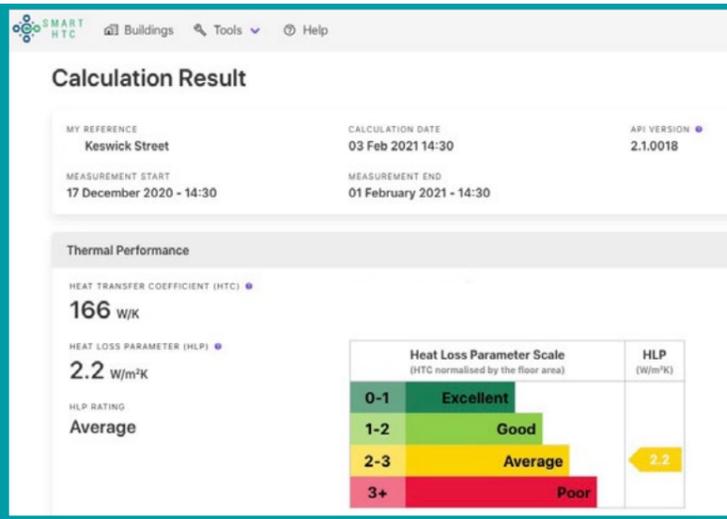
Home examples	SDLT energy adjustment rate SDLT paid SDLT Change v current % of selling price	Improved (within 24 months)	
		Low energy work	Rebate due to homeowner % of selling price
<b>Large detached house</b> £1,695,000 	SDLT Energy Adjustment Rate = 3 £166,876 +£49,726 +2.9% Ref #1	New rate = 53 Solid wall & loft insulation, new windows, 5kW PV, ground source heat pump	£50,979 -0.1%

<b>Relatively new 58m<sup>2</sup> mid floor flat</b> £102,000 	SDLT Energy Adjustment Rate = 78 £0 Ref #43		Bonus paid of £721 -0.7%
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New Homes	Current regulations	Enhanced	Future Homes Standard
<b>New 4 bed detached</b> £575,000 	Gas heated & performance tested Rate = 54 £17,596 -£1,154 -0.2% Ref #26	ASHP & performance tested Rate = 71 £12,081 -£6,669 -1.2%	ASHP, enhanced fabric & performance tested Rate = 90 £5,939 -£12,811 -2.4%

<b>New 3 Bed semi (85m<sup>2</sup>)</b> £292,000 	Gas heated & performance tested Rate = 73 £2,139 -£2,461 -0.8% Ref #60	ASHP & performance tested Rate = 89 £516 -£4,084 -1.4%	ASHP, enhanced fabric & performance tested Rate = 94 £0 -£4,600 -1.6%
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## 6. SDLT Energy Adjustment Introduction



The framework, along with a Beta version 'Home Energy SDLT Adjustment' [calculator](#), could be announced before COP26 with an implementation date 18 months later. This would give time to fine-tune the policy and, by releasing the calculator, purchasers, potential sellers and property valuers could immediately determine how the policy would impact them and start to respond as appropriate.

### A PHASED INTRODUCTION?

There may be an argument for a phased introduction of a SDLT energy adjustment in the wake of (if not immediately after) the present SDLT holiday stimulus to the housing market (applicable to the first £500k of a home's purchase price). This could provide an opportunity to soft-start the energy adjustment's mechanisms prior to full implementation and can be done in a way that tapers the stimulus impact of the SDLT holiday while managing some of the cliff-edge effects of its withdrawal.

Prior to full implementation, in the interim, a simplified, 'stimulus' version of an SDLT energy adjustment incentive could be introduced. This could offer a reduction of SDLT due on purchased properties that perform better than the current neutral point. Those that perform less well would not benefit from the reduction or could have the SDLT paid very modestly increased, signalling the direction of travel. They would potentially be able to access the Energy Company Obligation and to benefit from the SDLT energy adjustment rebate if they act to improve the property.

However, SDLT energy adjustment is a structural driver which works because it is long term and acts both positively and negatively. Significant and rapid results should not be expected during a phased launch, which makes it critical for it to be on a clearly communicated path towards the SDLT energy adjustment's full implementation. This could give confidence to the supply chain – in retrofit, conveyancing, mortgage lending and other areas – to invest and be fully prepared for the SDLT energy adjustment's full introduction.

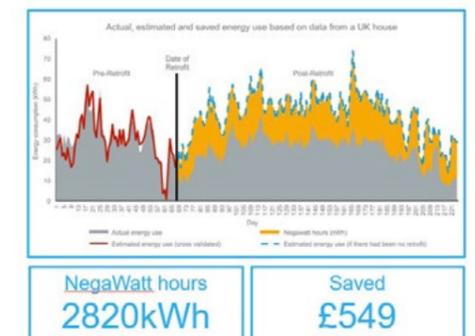
## 7. Driving real improvements in home energy & carbon performance

It is recognised that the existing assessment process for determining the energy performance of homes is rapid but can be a rather blunt tool. Whilst it is able to adequately differentiate between very poor, poor, average, good and very good, the outputs can be rather coarse. While the ongoing programme of action laid out in the EPC Action Plan will improve this, the SDLT energy adjustment could also drive continuous improvement in the retrofit market.

As the energy-adjusted SDLT payment is finalised 24 months after the property is sold, it is in the buyer's interest to undertake works and reassess the energy and carbon performance within this timescale to claim the rebate. The second assessment could be done in the same way as the first. However, where the householder chooses to use more refined techniques, such as those that have been developed via the Government's Smart Meter Enabled Thermal Efficiency Rating (SMETER) programme, this improved accuracy could be recognised and reflected.

The benefits of this are that the low energy/carbon improvements would actually be measured, providing enhanced confidence to Government and holding to account those undertaking the works – thus driving continuous improvement. The critical role the SDLT energy adjustment plays is to provide mass-scale demand for these measurement techniques to be delivered at low cost.

As well as driving continuous improvement in low energy retrofit, this also provides the Government with large-scale, quality-assured data on the performance of the housing stock as we transition to the zero-carbon future.



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# Appendix A: Benefits and disadvantages

## A.1 Benefits

- Provides a policy driver for encouraging the transition to net zero carbon, low energy homes through a normal market process with engaged buyers, which is not subject to boom-bust.
- There is a strong political narrative, which is entirely reasonable and consistent with the Government's zero carbon and 'build back better' agendas.
- Revenue neutral to the Treasury and structured to ensure that this continues, irrespective of how fast the housing stock's energy efficiency improves.
- The tax applies when a decision is being made, so the home purchaser has choices and the home-seller understands the implications.
- Progressive – naturally reflects the ability to pay: low-cost homes only benefit, high-cost homes pay more and save more.
- There is a natural 'soft start' – c. 900,000 properties p.a. (current sales) – and naturally phases out over time.
- Home-buying 'winners' – choosing a more energy efficient home results in slightly less SDLT but with disproportionate, irrational tax-avoiding 'joy'.
- Home-buying 'losers' – those choosing a less efficient home pay somewhat more SDLT with disproportionate, irrational 'irritation', stimulating action to retrofit their homes in the first 24 months and recover some or all of – or more than – the original additional SDLT cost.
- Home-buying 'losers', that don't then act within 24 months, have already accepted higher annual fuel bills so have little justified complaint if the SDLT is higher (and in many cases less than the amount they are already electing to pay extra on fuel every single year).
- Mortgage providers, other lenders and supply chains are likely to gear new products and services towards supporting retrofit following purchase.
- Will start to be reflected in house prices – which most householders are sensitive to. Even if they have no intention of moving, they will become sensitised to energy improvement initiatives and other action that encourages householders to upgrade their homes.
- Most of the process elements already exist and all of the necessary data is already being collected, so it is straightforward to deliver.
- By stimulating demand for low energy measures, the costs of delivering the Energy Company Obligation (ECO) reduce, lowering householder energy bills.
- A driver is created for reducing the 'design' v. 'as-built' performance gap and reducing the real-life carbon emissions from new homes built. Whilst not mandatory, should housebuilders choose not to join a building performance monitoring scheme, their customers would not enjoy the reduced SDLT benefit.

Possible concerns	...which are actually further benefits
<b>Penalises householders with poor-performing homes</b>	<ul style="list-style-type: none"> <li>• Publicity around the energy-adjusted SDLT provides a strong signal of the direction of travel and motivation to act before putting their home on the market. Often the best time for low energy works is when other dwelling improvements are made, a 'trigger point'. This policy incentivises action at these trigger points.</li> </ul>
<b>Doesn't drive take up in all homes from start</b>	<ul style="list-style-type: none"> <li>• Provides a softer, easier to accept start.</li> <li>• The number of EPCs is growing all the time, but they still only cover c. 25% of all homes. The SDLT approach uses data that is already generated for a home when it is marketed.</li> </ul>
<b>Doesn't apply to all homes</b>	<ul style="list-style-type: none"> <li>• Doesn't impact tenants in rented properties where other policies already exist to drive landlord action.</li> <li>• Lowest cost homes, where householders may not have the financial capacity to undertake improvement works, receive a benefit for acting but not an additional charge if they don't.</li> </ul>
<b>Only applies when someone moves</b>	<ul style="list-style-type: none"> <li>• The impact is at a point where the prospective purchaser is making a decision i.e. there is choice, moving energy considerations up their 'needs and wants' list.</li> <li>• Many home improvements occur in the first 12 months of ownership, and the SDLT rebate allows the new owner to benefit through the rebate from improvements made in this period.</li> <li>• 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.</li> <li>• Suspicion of Government means householders will tend to assume that the factors will increase over time so they might as well undertake low energy work sooner and get the benefit as well.</li> </ul>
<b>Could negatively impact the housing market</b>	<ul style="list-style-type: none"> <li>• SDLT is only adjusted up or down by a relatively small amount compared with the purchase value of the home. 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 as to the advantages associated with more energy efficient homes. The level of nudge can start modestly and be increased in time, if appropriate.</li> </ul>

## Appendix B: What metric?

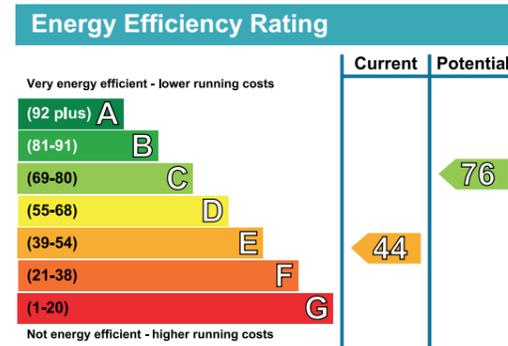
When a home is to be sold it must have a current Energy Performance Certificate. A survey of the home leads to the generation of an A to G energy rating to express the relative running cost of the home, similar to the energy rating on a fridge.

Whilst this may be helpful for a prospective householder when comparing the performance of homes that are similar, it is not helpful for adjusting SDLT where the policy objectives are:

- To drive lower carbon emissions
- To reduce energy demand particularly at peak periods when the energy systems are most stressed.

Issues with using the Energy Efficiency Rating include:

- As the relative fuel costs change the EPC ratings change.
- Mains gas is currently the lowest cost fuel, so the Energy Efficiency Rating is higher with a gas-heated home than an electrically heated one, even with a heat pump.
- The Energy Efficiency Rating doesn't take into account the size of the dwelling. For example: a large C75-rated home has much higher energy consumption and carbon emissions than a small C75-rated home.



However, the Energy Performance Certificate (EPC) also calculates the total energy demand of the home and the total CO<sub>2</sub> emissions. Simply focusing on the carbon emissions, however, would encourage switching to electric as the grid decarbonises, and not drive reduced consumption, making the national electricity decarbonisation task much harder and much more expensive.

Combining both the energy demand and the carbon emissions drives both outcomes.

The lower the energy demand use and carbon emissions, the higher the SDLT adjustment rating (0-100).

### Summary of this home's energy performance related features

Element	Description	Energy Efficiency
Walls	Solid brick, as built, no insulation (assumed)	★☆☆☆☆
Roof	Pitched, no insulation (assumed) Flat, no insulation (assumed) Roof room(s), no insulation (assumed)	★☆☆☆☆ ★☆☆☆☆ ★☆☆☆☆
Floor	Suspended, no insulation (assumed) Solid, no insulation (assumed)	— —
Windows	Single glazed	★☆☆☆☆
Main heating	Boiler and radiators, mains gas	★★★★☆
Main heating controls	Programmer, room thermostat and TRVs	★★★★☆
Secondary heating	Room heaters, mains gas	—
Hot water	From main system	★★★★☆
Lighting	Low energy lighting in 29% of fixed outlets	★★★★☆

Current primary energy use per square metre of floor area: 379 kWh/m<sup>2</sup> per year

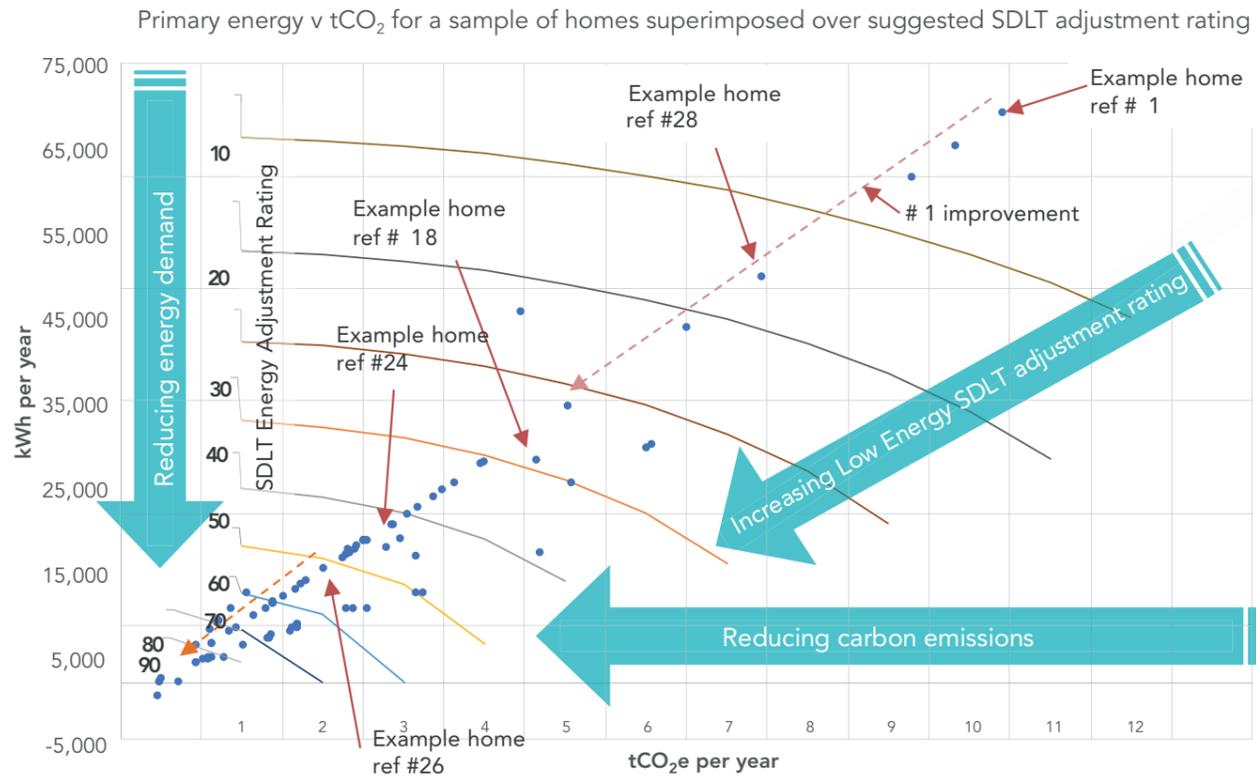
### About the impact of buildings on the environment

One of the biggest contributors to global warming is carbon dioxide. The energy we use for heating, lighting and power in homes produces over a quarter of the UK's carbon dioxide emissions.

The average household causes about 6 tonnes of carbon dioxide every year. Based on this assessment, your home currently produces approximately 12 tonnes of carbon dioxide every year. Adopting the recommendations in this report can reduce emissions and protect the environment. If you were to install these recommendations you could reduce this amount by 7.0 tonnes per year. You could reduce emissions even more by switching to renewable energy sources.



Below is a scatter graph where dwellings are plotted against their energy demand and carbon emissions. Overlaid are suggested levels of SDLT where rates in between are interpolated. A ratio between 1,000kWh and 1tCO<sub>2</sub> adjusts the relative benefit of reduced carbon emissions versus reduced energy demand to deliver desired balanced policy outcomes.



See Appendix E for calculation details.

Whilst an absolute energy and carbon metric is fair, small homes (less than 60m<sup>2</sup>) that are not very energy efficient 'perform' quite well – simply because they are small. In order to ensure the SDLT Adjustment drives energy efficiency in all cases, a further adjustment is made to ensure that the SDLT benefit is only fully paid when the energy per m<sup>2</sup> is below a set value and not paid at all when it is above a maximum.

For the illustrative tool the following was found to provide sufficiently nuanced outcomes:

- SDLT energy adjustment rate 'Neutral Point' = 55
- 1 tCO<sub>2</sub> reduction equivalent to approximately 2MWh consumption reduction
- Max Space Heating kWh/m<sup>2</sup> for ANY SDLT Energy Adjustment Benefit = 140kWh/m<sup>2</sup>
- Max Space Heating kWh/m<sup>2</sup> for MAXIMUM SDLT Energy Adjustment Benefit = 30kWh/m<sup>2</sup>

For further factors, see SDLT Energy Adjustment Illustrative Calculator

See also: Appendix E: Design Details



# Appendix C: Questions & Answers

## C.1 Will HMRC lose money?

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

If an interim, 'stimulus' version of the SDLT incentive – providing SDLT reductions only – were implemented first (e.g. for 1-2 years), this would taper the revenue forgone under the present SDLT holiday (in lieu of the potential for the holiday to be extended further).

## C.2 Who loses & who benefits?

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

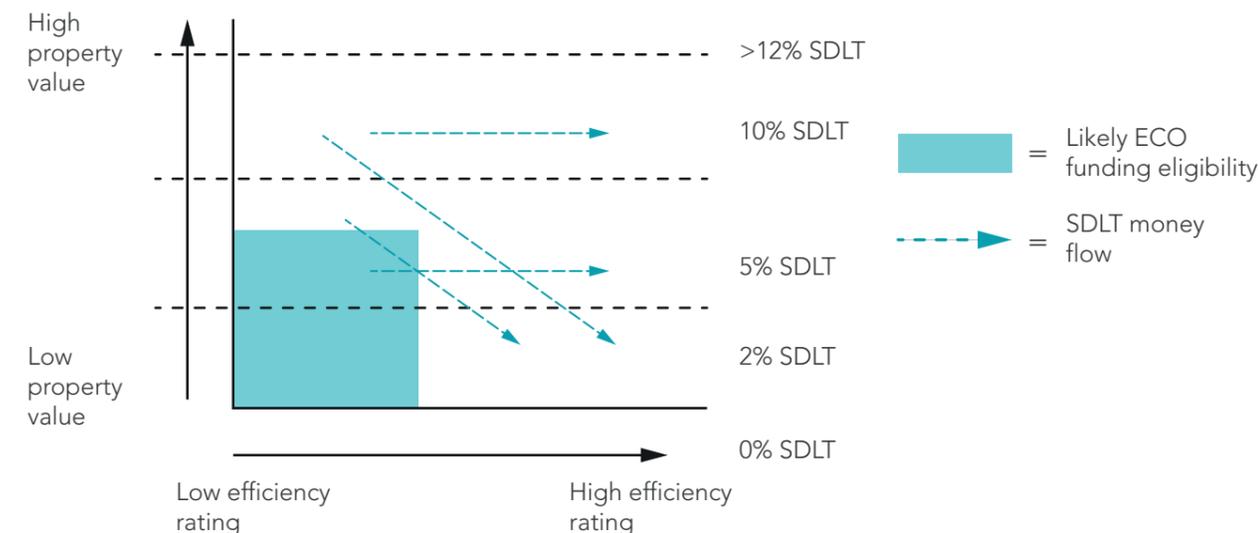
Properties in the 0% SDLT band are exempt from additional charge if the property falls below the set SDLT adjustment neutral point.

However, householders who buy properties above the neutral point and those that have improved the energy and carbon efficiency of their properties within 24 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 neutral point and a charge is imposed, the amount should not be excessive, relatively speaking, 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 in the 0% SDLT band the driver remains by rewarding the purchase of a more energy and carbon efficient home.



## C.3 Will the incentive migrate money from low value homes to higher value homes?

No, as it is revenue neutral the money flows are likely to move within SDLT bands from inefficient homes to efficient ones. There will be some money flow from inefficient properties paying SDLT to 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. This is likely to be further mitigated by the Government's intention to support energy and carbon performance of low-income homes over the longer term, for example through the Home Upgrades Grant alongside a larger ECO from 2022 (also relevant to the next question). The intention to introduce a voluntary requirement on mortgage lenders to improve the average energy performance of their residential portfolios could also have an ameliorative effect.

## C.4 Will the incentive negatively impact those in fuel poverty?

As the SDLT adjustment is only applied at the point of sale, those already within a property are not negatively impacted. Adjusting 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 been considered and are 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.

## C.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 energy and carbon 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 wider social benefit and for the benefit of those living in the properties and having to manage disproportionately high and ever-increasing energy bills.

Indeed, this is why the Energy Company Obligation is now targeted exclusively on low income and vulnerable households and the size of the obligation is due to increase from April 2022. The ECO effectively migrates money from all UK householders to the least energy efficient / low-income homes.

The fuel poverty focus within ECO will tend to advantage low-income householders in off-gas grid properties with lower SAP values, so the combination of SDLT energy and carbon performance nudge and ECO is unlikely to disadvantage rural properties. The risk of this unintended consequence is further reduced if the Home Upgrades Grant is rolled out to focus on off-gas low-income households as intended.

### C.6 Will the incentive migrate money from poorer areas to wealthy?

As above, exempting the 0% SDLT band properties from the requirement to make payments will stop property purchasers in poor areas being penalised, while allowing them to claim a rebate for purchasing properties above the SDLT energy adjustment neutral point or improving properties which fall below this. 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 that these homes will typically have higher SAP ratings. However, the cost of this will primarily be carried by higher value 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 potentially greater gains, the least efficient of these properties also have higher potential SDLT costs. 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, £30,000. Should different SDLT bands have materially different neutral axes, thereby impacting the money flows, then there is no additional complexity associated with each SDLT band having its own neutral point.

### C.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. Irrespective of which SDLT banding their new property falls in, they will be made aware of the benefits of buying a more energy efficient home at the time of purchase and financially rewarded for doing so both through the SDLT incentive and ongoing lower bills. This second reward will favour the elderly demographic disproportionately, 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 that 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.

### C.8 Will the incentive migrate money from large families to the rest of society?

As with the elderly, families should be made aware both of the SDLT charge for inefficient homes but also the higher operating costs associated with high occupancy profiles such as young families. Awareness of the charge will allow a family to judge whether to go ahead with the purchase, whether to access the various support mechanisms to refurbish the property or choose to pay the higher running costs.

### C.9 Will homes in the north, where it is cold and there is less solar, be disproportionately impacted as their energy demand and carbon emissions will be higher?

The SAP assessment methodology for existing homes currently does not take into account geographical location, so it would not impact the low energy SDLT rating. However, it could be argued that location should be taken into account as the benefit of insulation is obviously higher in the north where it is colder and the benefit of PV is higher in the south where the solar irradiance is higher. Should location be taken into account, then the SDLT rate would be lower in the north for the same dwelling design than the south, so there would be an impact. This said, the greater factor is that house prices are typically higher in the south compared with the north, although there are always exceptions. The house value SDLT impact is significantly higher than any impact associated with location.

### C.10 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 home's poor energy performance, they may well also be unlikely to afford the fuel bills of the property. However, the proposed voluntary target for mortgage lenders to improve the energy performance of their residential properties could result in concessional finance offers for retrofit that recognise the improved affordability of more efficient properties and help to unlock the rebate on offer for improvements.



### C.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 homeowners about improving their property, given that most home improvement happens between 6 weeks and 6 months after purchase.

Refurbishment also takes place prior to putting a property on the market to ensure a swift sale and maximum sale price. As long as 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 that there 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. For the seller, and their agents, there is little advantage to be gained currently from having the conversation, even if the home is energy efficient.

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 mis-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 and carbon efficiency will impact on the behaviour of the property seller, property buyer, estate agent, domestic energy assessor, energy efficiency measure supply chain and financial advisers. These dynamics would be further and significantly reinforced by early announcement of the eventual introduction of regulatory standards for owner-occupied homes to meet, as recommended by the Climate Change Committee.

Where householders have capital, extend their mortgage or avail themselves of other financing options as available, they will likely be more willing to pay for costly measures at this time than at any other, since this will give them the greatest chance of realising maximum payback.

### C.12 Why is property sale an appropriate time to retrofit the home?

The time of property sale and soon after is the ideal time to instal the maximum number of measures most cost-effectively and thereby achieve the 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 this is an 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 24 months of moving in, the householder has the maximum time in the property to enjoy the benefits

### C.13 Will housebuilders opt to undertake the required 'as built' performance measurement?

Housebuilders are typically very adept at taking advantage of any means of reducing costs.

By registering with a certified building performance body to undertake the as-built performance monitoring, they are not required to possess these skills in-house and the same standard of testing can be achieved across the industry. Publishing the results allows prospective home purchasers to compare a builder's relative performance. As only 5% of dwellings built are tested, this can be readily achieved in the winter period and without impacting the sales processes. Small housebuilders producing few homes per year may only have a home tested once every couple of years. The effect is still the same – a home's as-built performance will start to be a strategically significant factor worthy of attention, driving up standards.

As building regulations require new homes to be substantially better than the average existing home, the energy-adjusted SDLT will be highly attractive to prospective purchasers. Whilst an individual housebuilder can choose not to participate, they will be placing themselves at a commercial disadvantage.



### C.14 What if SAP moves to a performance measurement approach?

Determining the energy demand of a dwelling through measurement rather than calculation is fine. The SDLT energy adjustment simply uses these metrics irrespective of how they are generated. It would still be necessary to ensure a strong quality framework to ensure that different measurement techniques produce consistent outputs, but this would be required in any event. Indeed, an energy-adjusted SDLT could act as a driver for these techniques to be more widely adopted.

### C.15 How could this be made easy for conveyancing solicitors and HMRC?

This would be done through the use of a web-based tool or App where the selling price and three pieces of information from the Energy Performance Certificate (EPC) are entered and the results displayed automatically using the current 'neutral point' and SDLT bands. The same website is used to claim SDLT rebate once the works have been undertaken as demonstrated by an updated EPC.

### C.16 Will listed homes, where energy efficiency measures may be more complex, be disadvantaged?

Adjusting the SDLT up and down draws attention to the ongoing energy cost implications. Since January 2013 an EPC is no longer required for a listed home – the reasoning being that the EPC is not a sufficiently nuanced energy performance assessment and the recommendations are too generic.

In the intervening period methods for measuring the fabric performance of a home at low cost have been developed. These overcome the main objection to the original EPC. Furthermore, these homes also need their energy and carbon performance to be appropriately improved. Coupling accurate measured data with specialist advice is necessary to achieve this end.

The measured heat coefficient would be used with the SAP survey information to provide the Energy Performance Certificate for use with the SDLT adjustment calculation. Should this cost a little more than the standard EPC, then a modest reduction could be made to the SDLT payable in order to compensate. Once at scale this would no longer be necessary as the cost difference would be insignificant.

### C.17 What are the precedents for such an approach?

The closest precedent is fiscal incentives used to encourage low vehicle emissions – 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 improvements do not result in the cost / benefit becoming out of balance. No such recalibration was included in the structure of the VED scheme, which led to a loss of revenue over time. That is why we propose that the neutral point for the SDLT energy adjustment be updated annually, based on the previously submitted data. This, coupled with a factor accounting for the anticipated improvements in the forthcoming 24 months, will ensure that no overall SDLT loss or gain will occur. A similar proposal has been made for setting a CO<sub>2</sub> pivot point, recalibrated annually, for VED to ensure that the revenue take remains constant as the average emissions fall<sup>2</sup>.

Indeed, the whole energy efficiency adjustment 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 one gets smaller and they ultimately become the same. This also has the helpful effect that unimproved homes become increasingly disadvantaged as the neutral point rises. This effect could be further increased over time, should this be felt necessary, by increasing the 'adjustment %'.

It is difficult to disaggregate the respective impacts of increased fuel price and non-fuel taxes as motivators for more efficient cars. However, fuel costs are often less of a factor in the case of company cars, and the company car tax experience suggests that tax can be a powerful nudge. The HMRC assessment study in 2006 calculated that average emissions fell by 15g/km (c. 8%)<sup>3</sup> by 2004, due to the company car tax reform introduced in 2002. By 2009 the fall was c. 22%<sup>4</sup>. 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<sup>5</sup>.

Previously two niche SDLT policies have been introduced. The first, in around 2006, was aimed at rewarding very early take-up of homes that met Level 6 of the then Code for Sustainable Homes. Whilst SDLT was reduced to zero for these homes, Level 6 was extremely difficult to achieve – indeed, it was estimated by UKGBC that for 70% of homes it was not even technically possible to meet the standard. It was no surprise then that there was little take-up.

The second was a £500 reduction in SDLT linked to take-up of the Green Deal Home Improvement Fund (GDHIF). This also had little take-up, as it was effectively another grant which had significant strings attached.

In contrast to the policy being put forward in this paper, neither of the previous policies amounted to the long-term structural change in the SDLT regime which is required, and neither had the associated increase in SDLT for poor-performing homes. This is important because the avoidance of loss is a significantly more powerful driver of behaviour change than the simple pursuit of gain.

<sup>2</sup> Cutting emissions and making car cheaper to run. Centre:Forum Tim Leunig 2012

<sup>3</sup> Report on the evaluation of the Company Car Tax Reform: stage 2, HMRC 22 March 2006

<sup>4</sup> Using data from EST Fleet Briefing Feb 2010

<sup>5</sup> King Review of Low carbon cars Part 2 recommendations for action, 2008



### C.18 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 and carbon efficiency, provides a nudge at a critical decision point.
- There is no cost to the taxpayer / Treasury even as the housing stock improves.
- The ECO subsidy, FIT and RHI are available to support many low energy measures. Home Upgrade Grants, designed to help some of the poorest homes become more energy and carbon efficient, will also play their part.
- Home purchasers with more efficient homes pays less SDLT than today.
- The SDLT paid by home purchasers is only finalised after they have been in the property for 24 months. Up to this point they have the opportunity for a SDLT rebate to reflect any energy improvements they have made. Further, if they choose not to improve their homes during this period, they have already implicitly accepted paying higher future energy bills annually, so a one-off higher SDLT payment should, logically, also not be a concern.
- To provide time for householders to undertake low energy measures if they have not previously done so, the policy comes into force 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.

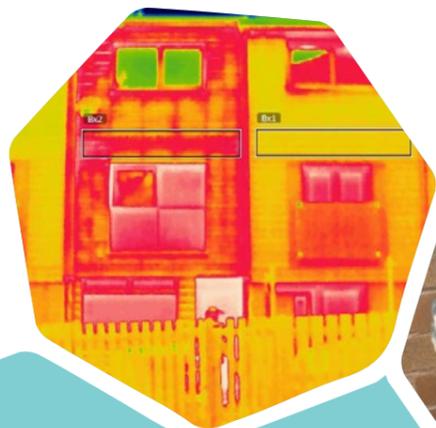
### C.19 How would you explain this to consumers?

Message:

- The UK's homes are more wasteful, in terms of energy, than most other western European countries and progressively this needs to change.
- To tackle climate change and achieve net zero emissions by 2050, emissions from homes must be addressed and this is better done progressively over time.
- To encourage the home buying market to place greater value on energy efficiency, the stamp duty calculation will be adjusted down and up.
- For a particular house price, the better the energy efficiency, the lower the stamp duty paid.
- A home which is more energy efficient than the average will pay less than today and vice versa.
- Any recognised improvement in a home's energy efficiency will reduce the SDLT paid.<sup>6</sup>
- The existing web-based EPC Advisor tool\* (with other web-based calculators likely also to be produced) allows the householder (or prospective householder) to see what adjusted stamp duty would be due and what level of rebate would be available if the suggested low energy works are undertaken within 24 months of moving in.

\* would need to be re-established

<sup>6</sup> True if the Energy Efficiency Rating approach is used. Less straightforward if using Energy Efficiency 'bands' because measures may, or may not, result in a move between 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.



## Appendix D: Illustrative examples

Below are a limited range of examples illustrating the SDLT currently paid when a property is purchased and which could be paid under the proposed system of low energy adjusted SDLT. Around 70 illustrative examples are included in the low energy-adjusted SDLT calculator.

Further testing and optimisation of the calculation is required to ensure the policy objectives are delivered.

For information, in these examples:

- SDLT Neutral point = 50
- Maximum SDLT increase = £100,000, Maximum rebate = £60,000
- Following an improvement, the minimum bonus is £10/SDLT adjustment point

### Typical 1970's 3 bed (Ref #24)

With gas boiler, no cavity wall insulation, full double glazing

Agreed selling price	£285,000
Current SDLT paid	£4,250
EPC	66D
CO <sub>2</sub> emissions	3.5t
Energy demand	17,000kWh
SDLT rate	46
Adjusted SDLT paid	£4,879 (+£629)



#### Improved?

If within 24 months of purchase the new householder had the cavity walls filled and new windows installed, the improved SDLT rate = 51 and a rebate of £690 could be claimed.

### New 4 bed detached (Ref #26)

Gas heated, built 2019

Agreed selling price	£575,000
Current SDLT paid	£18,750
EPC	85B
CO <sub>2</sub> emissions	2.6t
Energy demand	13,000kWh
SDLT rate	54
Adjusted SDLT paid	£18,750 (-£1,154)



#### Improved?

If within 24 months of purchase the new householder installed 2.5kW of PV, the improved SDLT rate = 55 and a rebate of £407 could be claimed.

Had the housebuilder used an ASHP rather than gas heating, then the adjusted SDLT rate would be 71 and the SDLT paid would have been £12,081, a reduction of £6,669.

If built to the Future Homes Standard, then the energy-adjusted SDLT would be approximately 91 and the SDLT paid would have been £5,939, a reduction of £12,811.

### Cottage (Ref #18)

Solid walled, LPG boiler, average double glazing, full low energy lights

Agreed selling price	£400,000
Current SDLT paid	£10,000
EPC	28F
CO <sub>2</sub> emissions	5.6t
Energy demand	23,500kWh
SDLT rate	35
Adjusted SDLT paid	£15,053 (+£5,053)



#### Improved?

If within 24 months of purchase the new householder installed internal wall and room-in-roof insulation, the improved SDLT rate = 50 and a rebate of £5,128 could be claimed.

In addition to these measures, if a heat pump is installed (with low carbon grid electricity assumed), the SDLT rate = c. 61 and a rebate of £7,119 could be claimed.

### Detached house 160m<sup>2</sup> (ref #28)

Cavity walled no insulation, gas heated, pitched roof with no insulation

Agreed selling price	£550,000
Current SDLT paid	£17,500
EPC	49E
CO <sub>2</sub> emissions	8.5t
Energy demand	40,700kWh
SDLT rate	16
Adjusted SDLT paid	£33,785 (+£16,285)



#### Improved?

If within 24 months of purchase the new householder installed cavity wall insulation and insulated the loft and floors, the improved SDLT rate = 34 and a rebate of £8,164 could be claimed.

### Large, 357m<sup>2</sup> detached house (Ref #1)

Solid walled no insulation, 100mm loft insulation, gas heated

Agreed selling price	£1,695,000
Current SDLT paid	£117,150
EPC	62D
CO <sub>2</sub> emissions	10.4t
Energy demand	50,500kWh
SDLT rate	1
Adjusted SDLT paid	£174,144 (+£56,994)



#### Improved?

If within 24 months of purchase the new householder installed solid wall insulation, insulated the loft, installed new windows and added 5kW of PV, the improved SDLT rate = 31 and a rebate of £32,130 could be claimed.

In addition to these measures, if a heat pump is installed, the SDLT rate = c. 58 and a rebate of £60,000 could be claimed.

### Relatively new 58m<sup>2</sup> mid floor flat (Birmingham) (Ref #43)

Electrically heated, full low energy lights, highly insulated walls, double glazing

Agreed selling price	£102,000
Current SDLT paid	£0
EPC	78B
CO <sub>2</sub> emissions	0.6t
Energy demand	4,500kWh
SDLT rating	78
SDLT Bonus to be claimed	£721



#### Improved?

Had the retrofit used ASHP or communal GSHP, then improved SDLT rate = 85 and the SDLT to be paid at point of sale would have been £384.

### Existing 65m<sup>2</sup> mid floor flat (Oxford) (Ref #14)

System build wall with no insulation, electrical heating with old night storage heaters on E7, no low energy lights, double glazing

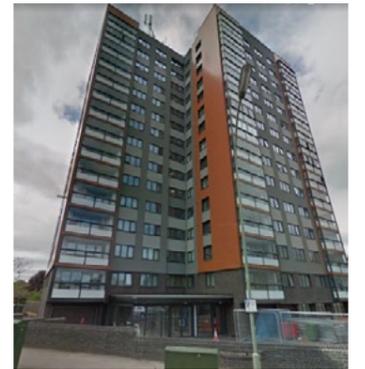
Selling price	£249,000
Current SDLT paid	£2,499
EPC	63D
CO <sub>2</sub> emissions	1.4t
Energy demand	10,500kWh
SDLT rating	52
Adjusted SDLT paid	£2,371 (-£128)



#### When refurbished (Ref #14.1)

External wall insulation, high performance glazing, standard tariff electric heaters, no low energy

Selling price	£249,000
Current SDLT paid	£2,499
EPC	64D*
CO <sub>2</sub> emissions	0.9t
Energy demand	6,500kWh
SDLT rating	74
Adjusted SDLT paid	£1,083 (-£1,416)



\*This EPC hardly changed following retrofit because the E7 night storage heaters were replaced by direct electric, thereby reducing some of the tenant cost savings despite electricity consumption and CO<sub>2</sub> emissions being reduced by c. 40%

Note: SAP points were sourced from publicly available EPCs. Selling prices and retrofit upgrades were made up to illustrate particular situations.

# Appendix E: Design Details

## E.1 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 EPC database (existing)
	Check and confirm property basic details	Register confirmation
	Enter 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 Green Deal works)	
Purchaser (now the homeowner)	Log into the secure site	
	Enter the address and SDLT EE Rebate URN	
	Enter the EPC URN	<ul style="list-style-type: none"> <li>Look up the old and the new EPC and compare</li> <li>Adjust the calculation if different SAP versions used</li> <li>Calculate the rebate using the most current HMRC parameters</li> </ul>
	Indicate the EE measures undertaken (tick box)	Used as an audit sense check
HMRC	Authorise payment	<ul style="list-style-type: none"> <li>Auto-generate rebate cheque</li> <li>Send cheque</li> <li>Trigger EPC audit as required</li> </ul>

## E.2 Calculating the low energy SDLT adjustment rating

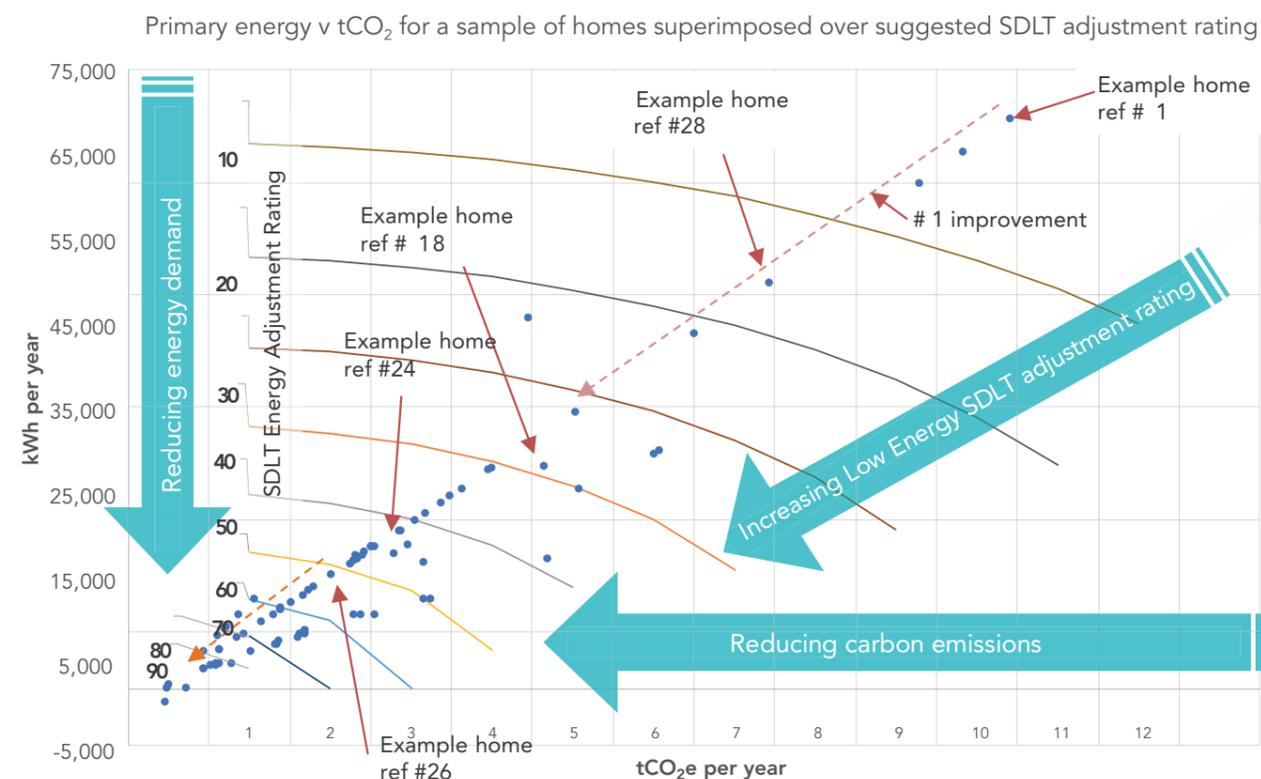
There are many ways in which the SDLT energy adjustment could be calculated. The illustrated calculation used in this paper combines energy demand, carbon emissions and space heating /m<sup>2</sup> into a single SDLT energy adjustment rating.

Below is a scatter graph where dwellings, represented as dots, are plotted against their energy demand and carbon emissions, with contour lines representing the SDLT energy adjustment rates overlaid for reference. A ratio between 1,000kWh and 1tCO<sub>2</sub> adjusts the relative benefit of reduced carbon emissions versus reduced energy demand to deliver desired balanced policy outcomes.

The SDLT adjustment rate is not linear with the energy demand v. CO<sub>2</sub> emissions. This is to ensure that there is adequate differentiation between the better performing homes and the overall adjustment rating is not distorted by the lowest performing buildings.

The ratio assumed between energy demand and carbon emissions is intended to weight the SDLT adjustment benefit across the two metrics. There is some benefit to be derived from reduction in CO<sub>2</sub>, but a much greater benefit is derived from reducing the energy consumed. For illustrative purposes a 1tCO<sub>2</sub> reduction is set to be equivalent to a reduction of 2,000kWh of energy consumed. This is configurable to drive the desired policy outcomes.

Rather than using primary energy, which is changing rapidly, the illustrated calculator uses energy consumed, i.e. that which is measured at the dwelling's electricity or gas meter.



Homes which are very small may have quite low carbon emissions and energy but poor energy efficiency, resulting in high space heating/m<sup>2</sup>. To mitigate this and ensure that energy efficiency lies at the heart of the policy, the full benefit of a SDLT energy adjustment above the neutral point is received when the space heating/m<sup>2</sup> is below a set value and there is no benefit if it is above a set maximum value. In between these two set values the benefit is proportional.

For the illustrative calculator the following were used:

- Maximum Space Heating kWh/m<sup>2</sup> for any SDLT Energy Adjustment Benefit = 140kWh/m<sup>2</sup>
- Maximum Space Heating kWh/m<sup>2</sup> for maximum SDLT Energy Adjustment Benefit = 30kWh/m<sup>2</sup>

It is recognised that the dwelling energy assessment has a level of uncertainty, particularly as a consequence of the assumptions that have to be used for the performance of fabric and services. To ensure that the energy performance is not being overstated and to provide an incentive for an enhanced assessment of energy performance using the measurement techniques currently being commercialised, a contingency has been applied to the simple 'survey only' approach currently used. This contingency is reduced, or eliminated, if the survey is supplemented by a measurement of actual dwelling fabric performance. It is not expected that the enhanced energy assessment would be undertaken before sale – however, it would be in the purchaser's interest to undertake the enhanced assessment after work is undertaken, rather than the just the energy survey, prior to claiming the rebate. The illustrative calculator includes a crude approach to this contingency which demonstrates the concept but would need refinement.

### E.3 Calculating the SDLT Energy Adjustment Neutral Point

The SDLT neutral point is calculated taking into account a number of factors:

- Previous year's dwelling energy demand and CO<sub>2</sub> results obtained from the web portal (including updated EPC rebates)
- Anticipated increase in SDLT 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 SDLT Rebate web portal
- Revenue loss / gain from previous 24 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 ongoing basis.

Should the rate of energy efficiency improvement increase in a particular year and the revenue take, across all transactions, is therefore lower 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.

### E.4 Calculating the SAP Adjustment Factor

Previous year's 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:

Adjustment Factor			SDLT Band		SDLT		Properties sold in 2011 (0,000)
Nominal Energy Adjustment % by SDLT band	Below neutral point	Above neutral point	from	to			
1.0%	1.0%	0.60%	£-	£125,000	0%		238
5.0%	5.0%	3.00%	£125,000	£250,000	2%	£-	423
4.0%	4.0%	2.40%	£250,000	£500,000	5%	£-	162
3.0%	3.0%	1.80%	£500,000	£925,000	5%	£-	38
2.0%	2.0%	1.20%	£925,000	£1,500,000	10%	£-	4
0.9%	0.9%	0.54%	£1,500,000	£200,000,000	12%	£-	1
0.7%	0.7%	0.42%	£200,000,000			£-	869

For SDLT points above the SDLT Neutral Point the adjustment factor is reduced by half. This is to ensure that new and high-performance homes do not benefit excessively and to create a fund to pay for the home energy efficiency bonus for those that don't pay SDLT.

### E.5 Prevention of fraud

No specific improvements to the Standard Assessment Procedure (SAP) are necessarily required for the introduction of the Energy Adjusted SDLT. However, the enhancements proposed in the EPC Action Plan – along with the option to enhance the energy assessment using monitored data – would be highly beneficial.

Some additional auditing may be required, for example:

- 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

## E.6 Additional details

### Homes that don't pay SDLT

Homes that are below the SDLT threshold of £125,000 don't pay SDLT. Rather than provide no incentive to purchase a better performing home, a SDLT bonus is paid if the home is above the neutral axis or if the home is improved with 24 months of purchase.

For illustration purposes, a 1% adjustment factor per SDLT rate point has been used.

### Minimum SDLT rate

Where dwelling values are low, the £ per low energy SDLT rate will also be low, especially above the neutral point where the rate is reduced. To ensure that householders undertaking works and purchasers of these lower cost homes still benefit in a meaningful way, a backstop minimum rate can be set. For the purposes of the illustrations this has been set to £15/point.

Smart controls which avoid space and water heating during peak grid periods – It is suggested that energy demand is adjusted down as a means of rewarding taking load off the grid at peak times.

Energy storage with smart controls – It is suggested that energy demand is adjusted down in order to reward taking load off the grid at peak times.

### PV generation benefit

It is suggested that only PV generation which is used within the home is credited, to prevent dwellings with land simply installing excess PV to reduce their SDLT burden whilst exporting the bulk of electricity generation. Use of batteries, thermal stores and heat pumps to increase the quantity of generated electricity used within the home would still be rewarded.



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