

Title: Consultation Stage Impact Assessment for the Private Rented Sector Regulations IA No: DECC0168 Lead department or agency: Department of Energy and Climate Change	Impact Assessment (IA)
	Date: 22/07/2014
	Stage: Consultation
	Source of intervention: Domestic
	Type of measure: Secondary legislation
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Summary: Intervention and Options **RPC: AMBER**

Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB in 2009 prices)	In scope of One-In, One-Out?	Measure qualifies as
£1.5bn	£1.2bn	-£38.7m	Yes	Zero Net Cost

What is the problem under consideration? Why is government intervention necessary?
 Market failures and barriers within the private rented sector (PRS) impede the uptake of cost-effective energy efficiency measures. They include split incentives (the costs of energy efficiency improvements are borne by landlords, while the benefits – such as lower energy bills - accrue to current or future tenants); inertia among landlords or tenants; and imperfect information. The Green Deal and the Energy Company Obligation (ECO) partially overcome some of these barriers, particularly where there are long tenures. However, the current policy framework alone will not entirely overcome these barriers, as sitting tenants only receive a portion of the overall benefits associated with lower fuel bills and/or a warmer property, which may not be sufficient to overcome the ‘hidden’ costs associated with installing the measures. Improving the energy efficiency of the PRS is important as the domestic PRS has the highest proportion of the least thermally efficient properties of any tenure type, and a high proportion of people living in the PRS are in fuel poverty. The non-domestic PRS, meanwhile, has a large amount of cost-effective energy saving potential.

What are the policy objectives and the intended effects?
 The policy intends to drive cost-effective energy efficiency improvements in the domestic and non-domestic PRS, which would not have occurred otherwise. These energy efficiency improvements will lead to: fewer greenhouse gas emissions, lower energy bills (for households and firms), fuel poverty alleviation, and lower overall energy demand. The policy will also lead to greater energy security, improved air quality, and a lower burden on the health service as a result of warmer homes.

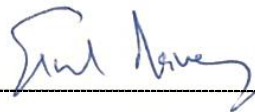
What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)
 Three policy options have been considered. Under the preferred option, from April 2018, landlords in the domestic and non-domestic PRS who are re-letting a property that requires an Energy Performance Certificate (EPC), and where the EPC rating is ‘F’ or ‘G’, must attempt to improve the rating to a minimum of an ‘E’. They can do this by either: taking out a Green Deal (provided the package meets the ‘Golden Rule’); using ECO funding (where available); or obtaining a local authority or government grant (or using a combination of these). The Regulations initially apply to PRS properties once they are let to a new tenant. However, a ‘regulatory backstop’ is proposed, which would come into effect several years after April 2018 to capture those PRS properties which have not been re-let since April 2018. At this point all landlords owning ‘F’- or ‘G’-rated properties covered by EPC Regulations must attempt to meet the standard. Alternative policy options consulted on differ from the preferred option by: (1) having no regulatory backstop; and (2) requiring all privately rented properties without exemptions to comply with the proposed Regulations from April 2018. In addition, under all options, from April 2016 landlords in the domestic PRS cannot unreasonably refuse tenants’ requests for consent to undertake energy efficiency improvements (the ‘tenants’ rights’). Non-regulatory approaches have been introduced in the past and there are other policies that currently incentivise uptake of energy efficiency measures. Evidence suggests that, despite these measures, the proposed Regulations are required to overcome PRS-specific barriers to improving the energy efficiency of these buildings.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 04 / 2023

Does implementation go beyond minimum EU requirements? **N/A**

Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	Micro Yes	< 20 Yes	Small Yes	Medium Yes	Large Yes
What is the CO2 equivalent change in greenhouse gas emissions? (Million tonnes CO2 equivalent)			Traded: -11	Non-traded: -2.9	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:  Date: 17/07/2014

Summary: Analysis & Evidence

Policy Option 1

Description: PRS Regulations with a ‘soft start’ for the EPC minimum of an ‘E’ from April 2018 (i.e., landlords are only required to act once the sitting tenant moves out and a new tenant moves in), but with a ‘regulatory backstop’ (to capture tenancies of a long duration) applying from April 2020 (for the domestic PRS) and April 2023 (for the non-domestic PRS). From April 2016, landlords in the domestic PRS cannot unreasonably refuse tenant’s requests to undertake energy efficiency improvements to their rented accommodation.

FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2014	Time Period Years 57	Net Benefit (Present Value (PV))		
			Low: Optional	High: Optional	Best Estimate: £1.5bn

COSTS (£m)	Total Transition (Constant Price)	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			£1.7bn

Description and scale of key monetised costs by ‘main affected groups’

Key monetised costs are those associated with installing the energy efficiency measures (£1.1bn), Green Deal credit re-payments (£0.4bn), the ‘hidden’ costs associated with installing these measures (£0.1bn), and Green Deal assessment costs (£0.1bn). Smaller costs include understanding the Regulations (£30m). Costs to landlords include Green Deal credit repayments during void periods, a proportion of the ‘hidden costs’ (which are shared with the tenant), and Green Deal assessment costs (when not offered for free). The presence of the Green Deal and other funding options will ensure that landlords are not subject to upfront capital costs as a result of the proposed Regulations, and landlords may also be able to pass on some of their costs onto tenants through marginally higher rent charges, depending on local market conditions. The remainder of the costs will be incurred by tenants. However, tenants will be safeguarded by the Golden Rule (that is, the estimated energy savings are expected to be larger than the Green Deal credit repayments).

Other key non-monetised costs by ‘main affected groups’

It has not yet been possible to fully estimate the costs to landlords of demonstrating compliance, an alternative payback rule in the non-domestic PRS, nor the tenants’ rights component of the proposed Regulations, which applies from April 2016.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			£3.2bn

Description and scale of key monetised benefits by ‘main affected groups’

Key benefits are the reduced energy demand (£2.6bn), the carbon savings (£0.5bn), the comfort benefits associated with warmer homes (£0.1bn). There are also smaller benefits associated with improvements in air quality (£30m).

For tenants, benefits take the form of lower energy bills, and warmer homes. Landlords may benefit from an increase in their property’s market value as a result of improvements in the property’s energy efficiency. These bill savings and increases in property value are distributional implications of the policy, and so have not been included in the benefits to avoid double counting of the energy saving benefits. The benefits associated with reduced energy demand, fewer carbon emissions, and improved air quality, accrue to wider society.

Other key non-monetised benefits by ‘main affected groups’

Likely benefits to landlords that have not been quantified include potentially higher rents and shorter void periods. Moreover, the proposed Regulations are expected to alleviate fuel poverty, improve tenant health, and could also reduce NHS costs. By lowering energy demand, the Regulations may also reduce reliance on imported fossil fuels, thus increasing the security of energy supply.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5 (years 1-30), 3.0 (>30 years)
<p>Key risks to the costs and benefits outlined are around compliance with the proposed Regulations. There is also an assumption that, by 2018, Green Deal finance will be available in the non-domestic sector. The likely costs and benefits will also be affected by (uncertain) future energy prices (these are varied as part of the sensitivity analysis).</p> <p>The tenants' rights component of the proposed Regulations has not been monetised on the grounds of proportionality; as its impact is challenging to assess effectively and its impact is expected to be small relative to the minimum energy efficiency standards.</p>		

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: £68.7	Benefits: £107.4m	Net: -£38.7m	Yes	Zero Net Cost

Summary: Analysis & Evidence

Policy Option 2

Description: As Option 1 but without a regulatory backstops in April 2020 (for the domestic PRS) and April 2023 (for the non-domestic PRS). From April 2016, landlords in the domestic PRS cannot unreasonably refuse tenant’s requests to undertake energy efficiency improvements to their rented accommodation.

FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2014	Time Period Years 57	Net Benefit (Present Value (PV))		
			Low: Optional	High: Optional	Best Estimate: £1.4bn

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total (Present Value) Cost
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			£1.6bn

Description and scale of key monetised costs by ‘main affected groups’
 Costs are lower than Option 1 because they are incurred later. The soft start to the Regulations also means that fewer properties, which would have made energy efficiency improvements in the absence of the policy, but at a later date, are required to act early, compared to Option 1.

Other key non-monetised costs by ‘main affected groups’
 It has not yet been possible to fully estimate the costs to landlords of demonstrating compliance, an alternative payback rule in the non-domestic PRS, nor the tenants’ rights component of the proposed Regulations, which applies from April 2016.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			£3.0bn

Description and scale of key monetised benefits by ‘main affected groups’
 The lack of a regulatory backstop means that, for some properties, benefits are incurred later than in Option 1.

Other key non-monetised benefits by ‘main affected groups’
 Likely benefits to landlords that have not been quantified potentially include potentially higher rents and shorter void periods. Moreover, the proposed Regulations are expected to alleviate fuel poverty; improve tenant health, and could also reduce NHS costs.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5 (years 1-30), 3.0 (>30 years)
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Key risks to the costs and benefits outlined are around compliance with the proposed Regulations. There is also an assumption that, by 2018, Green Deal finance will be available in the non-domestic sector. The likely costs and benefits will also be affected by (uncertain) future energy prices (these are varied as part of the sensitivity analysis). The tenants’ rights component of the proposed Regulations has not been monetised on the grounds of proportionality, as its impact is challenging to assess effectively; its impact is also expected to be small relative to the minimum energy efficiency standards.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: £62.9	Benefits: £105.6m	Net: -£42.7m	Yes	Zero Net Cost

Summary: Analysis & Evidence

Policy Option 3

Description: As Option 1, but with a 'hard start' to the EPC minimum of an 'E' in April 2018 (i.e., all non-exempt rented properties must comply from April 2018). From April 2016, landlords in the domestic PRS cannot unreasonably refuse tenant's requests to undertake energy efficiency improvements to their rented accommodation.

FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2014	Time Period Years 57	Net Benefit (Present Value (PV))		
			Low: Optional	High: Optional	Best Estimate: £1.7bn

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			£2.1bn

Description and scale of key monetised costs by 'main affected groups'
 The 'hard start' means that, for some properties, the costs are incurred earlier than in Option 1.

Other key non-monetised costs by 'main affected groups'
 It has not yet been possible to fully estimate the costs to landlords of demonstrating compliance, an alternative payback rule in the non-domestic PRS, nor the tenants' rights component of the proposed Regulations, which applies from April 2016.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low			
High			
Best Estimate			£3.7bn

Description and scale of key monetised benefits by 'main affected groups'
 The 'hard start' means that, for some properties, benefits are incurred earlier than in option 1.

Other key non-monetised benefits by 'main affected groups'
 Likely benefits to landlords that have not been quantified potentially include higher rents and shorter void periods. Moreover, the proposed Regulations are expected to alleviate fuel poverty; improve tenant health, and could reduce NHS costs.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5 (years 1-30), 3.0 (>30 years)
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Key risks to the costs and benefits outlined are around compliance with the PRS Regulations, which is reflected in the different assumptions within each of the scenarios. There is also an assumption that, by 2018, Green Deal finance will be available in the non-domestic sector. The likely costs and benefits will also be affected by the (uncertain) future costs of energy prices (these are varied as part of the sensitivity analysis).
 The tenant refusal component of the Proposed Regulations has not been monetised on the grounds of proportionality, as its impact is challenging to assess effectively and is expected to be small relative to the minimum energy efficiency standards.

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: £84.3m	Benefits: £131.4m	Net: -£47.1m	Yes	Zero Net Cost

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1. Introduction and description of the problem

1. This consultation stage Impact Assessment (IA) accompanies the Government consultation on the secondary legislation for the proposed domestic and non-domestic PRS Regulations, which apply to England and Wales. The domestic and non-domestic Regulations include a Minimum Energy Efficiency Standard, which requires all applicable properties in the PRS to be improved to a specified minimum standard. The domestic Regulations also include provisions that will empower tenants to request consent for energy efficiency measures that may not be ‘unreasonably refused’ by the landlord. This document provides an assessment of the impact of the Regulations, including an assessment of aspects of the policy design consulted on.
2. This section includes a background on the PRS. It focuses on the size of the sector and the scale of the barriers to the uptake of energy efficiency measures in the sector.

1.1 Domestic PRS

1.1.1 Scale of the problem¹

3. There were 4.2 million domestic PRS properties in England and Wales in 2011, comprising around 18% of the total domestic housing stock. This makes it the second largest form of tenure after owner occupation (which makes up around two thirds of the total housing stock)².
4. The average energy efficiency of buildings within the domestic PRS has improved over the last 15 years. The average Standard Assessment Procedure (SAP)³ rating in the PRS increased from around 40 (an EPC ‘E’ rating) to just over 55 (an EPC ‘D’ rating). This improvement is partly due to an increase in the sector’s size over this period⁴. This is shown in Figure 1 below. New properties were responsible for most of the increase in PRS supply, meaning that by 2011 nearly 20% of PRS properties in England were of post-1990 vintage (compared to around 13% and 12% for the owner occupier and social sector respectively)⁵. Newer properties tend to have higher energy efficiency ratings, due to more stringent building regulations. Many of these new build properties were flats, which tend to have higher EPC ratings.

¹ Figures are drawn from the English Housing Survey (EHS) 2012-12. Data from the recently-published EHS 2012-13 (published while this impact assessment was being finalised will be included in the final IA).

² 2011 Census,

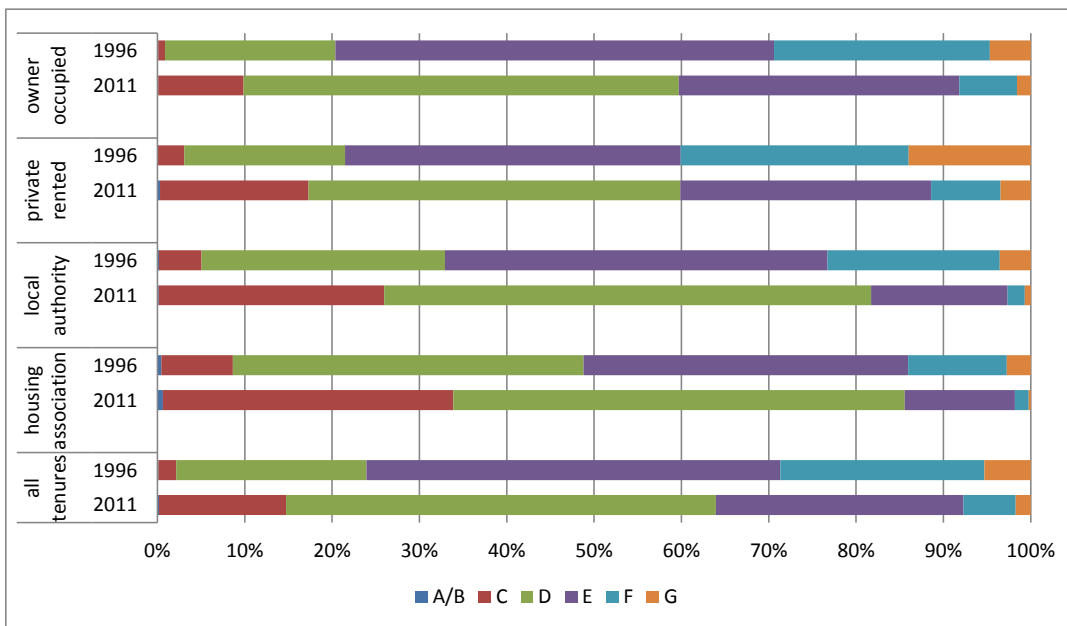
(<http://www.ons.gov.uk/ons/rel/census/2011-census/key-statistics-for-local-authorities-in-england-and-wales/stb-2011-census-key-statistics-for-england-and-wales.html#tab---Accommodation-and-tenure>); The EHS 2011-12 suggests similar figures.

³ SAP is the Government’s recommended system for producing a home energy efficiency rating. SAP scores are divided into 7 bands ranging from A-G, and each range has a set amount of ‘SAP’ points. More details on SAP can be found here: <https://www.gov.uk/standard-assessment-procedure>. Details of how SAP scores translate into EPC ratings can be found here: <http://www.energykey.co.uk/epc.html>

⁴ In England, the number of PRS properties increased from around 2 million in 1996 to nearly 4 million 2011. The number of ‘owner occupied properties, meanwhile, increased by less than 1 million (from around 13.5 million to around 14.4 million), while social housing decreased by 0.4 million (from 4.2 million to 3.8 million). Source: EHS 2011-12.

⁵ EHS 2011-12.

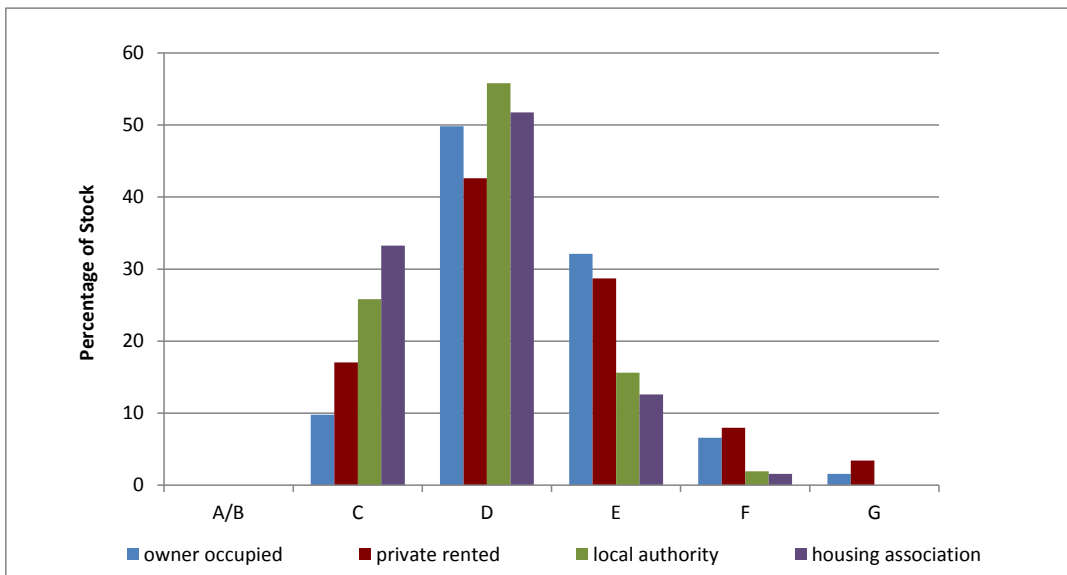
Figure 1: Distribution of EPC Ratings in England by Tenure in 1996 and 2011



Source: English Housing Survey 2011-12

- There remains, however, a stock of older properties in the PRS which have the lowest energy ratings of all domestic properties. The sector has a high proportion of dwellings that were constructed pre-1919 – 37% compared with 21% in the owner occupier sector⁶. Between 1996 and 2011, the number of F and G rated properties in England fell in the private rented sector at a much slower rate than other sectors, reducing by just 40%, compared to over 70% in the owner occupier sector and over 90% for local authority housing⁷.
- The distribution of EPC ratings within the PRS, and how it compares with other tenures, is shown in Figure 2 below. The PRS has the highest percentage of homes with the lowest energy ratings⁸.

Figure 2: Distribution of EPC Ratings by Tenure (England) in 2011



Source: EHS 2011-12

⁶ EHS 2011-12. DECC analysis of the survey also shows that 65% of 'F'- and 'G'- rated households in England are of pre-1919 vintage.

⁷ *Ibid*. The decline in the volume of 'F'- and 'G'- rated PRS, owner occupier and local authority properties is not directly comparable with the distribution shown in Figure 1, as the number of properties within each of these tenure types changed between 1996 and 2011. See footnote 4 for more information.

⁸ *Ibid*

7. The PRS tends to lag behind other sectors in terms of insulation. In 2011:
- 34% of PRS homes with cavity walls were uninsulated compared with 30% in the owner occupied sector;
 - 8% of PRS homes had no loft insulation (LI) compared with 4% in the owner occupied sector; and
 - 12% of PRS homes had no double glazing compared with 5% in the owner occupied sector⁹.
8. If all properties in England and Wales in the PRS were required to obtain or display an EPC when the properties let out or sold, then, we estimate there could be around 480,000 domestic PRS properties with an EPC rating of an 'F' or a 'G'¹⁰ in 2011. Not all properties are, however, required to obtain an EPC due to EPC exemptions (see Annex A for further information). With the EPC exemptions, around 3.8m properties across the total domestic PRS stock are required to obtain an EPC, and around 430,000 of these have an EPC rating of an 'F' or 'G'.

1.1.2 Tenancy length in the domestic PRS

9. Short tenancy lengths reduce the tenant's share of the overall gain from energy efficiency improvements (see Section 2). The domestic PRS is characterised by frequent tenant turnover. Table 1 below shows that around a third of tenants have lived in their current place of residence for under a year. The median length of stay for all tenants is around two years. However, a significant minority of tenants have lived in their current place of residence for much longer than the two years on average, and nearly one-in-five tenants have lived in their current place of residence for more than five years.¹¹ Regardless of tenancy length, tenants in the PRS may see less value in investing their time or resources in improving the standard of the property they occupy. The Department's research for the Green Deal found that PRS tenants have a short-term mind-set about the property they rent, and even those who had been in their property for several years, often do not consider where they lived to be their 'property' or even their long term 'home'.¹² While domestic tenants wanted a comfortable place to live, many tenants expressed little sense of ownership or responsibility towards the property.¹³
10. The combination of an energy inefficient housing stock, split landlord-tenant incentive, and largely short term views of tenants to their property means that this part of the housing stock is likely to be hardest to improve. Furthermore, tenants in the PRS who may be willing to take action have limited rights as to the fabric and fixed services in the property that they rent. They may also face further barriers to instigate improvements compared to owner occupiers, as they must seek and obtain landlord consent. The Department's research on the Green Deal found that tenants seemed to be unwilling to ask their landlord for general improvements unless they were remedial (except possibly at the start of the tenancy)¹⁴.

Table 1 Length of residence in the Domestic Private Rented Sector

	< 1 Year	1-2 Years	2-3 Years	3-4 Years	5-9 Years	10-19 Years	20-29 Years	> 30 Years
Private Renters (%)	32.3	17.7	17.4	13.6	10.1	4.8	1.8	2.3

Source: English Housing Survey 2011-12

⁹ *Ibid*

¹⁰ This is based on the number of PRS properties in England and Wales and the percentage of PRS properties in England with an EPC rating of 'F' or 'G'. This makes the assumption that the percentage of PRS properties with an EPC rating of 'F' or 'G' in Wales is the same as that in England.

¹¹ Length of residence data from the EHS 2011-12 suggests that around 10% of tenants have occupied their current address for 10 years or more, so there is potentially a long tail when it comes to duration of stay. However, it seems likely that tenants in the poorest quality housing will move more frequently than average, so the distribution of tenancy length given in the EHS may overestimate the proportion of the duration of stay for tenants in F and G rated properties.

¹² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43019/3506-green-deal-consumer-research-prs.pdf

¹³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43019/3506-green-deal-consumer-research-prs.pdf

¹⁴ *Ibid*

1.1.3 Domestic PRS and fuel poverty¹⁵

11. In a recently published Strategic Framework for Fuel Poverty in England, the Government identified that living in the PRS was a risk factor that independently and significantly increased the likelihood of a household being fuel poor.¹⁶ This is also reflected in the most recent Fuel Poverty National Statistics, which show that the PRS accounted for a significantly disproportionate share of fuel poor households (around a third of all fuel poor households live in the PRS, despite the sector only accounting for around 17% of all households in England).¹⁷
12. Over 20% of the households in the English PRS are fuel poor¹⁸, while around 34% of all households with an EPC rating of 'G' (and around 25% of households with an EPC rating of 'F') were in fuel poverty in 2011 because of the high heating costs. Moreover, homes within the PRS are disproportionately likely to fail the thermal comfort criterion for a decent home¹⁹, 15% of households failed the criterion in 2011-12, compared to 8% in the owner occupier sector, and just 6% in the social housing sector. The domestic PRS has a higher incidence of dwellings (9.1%) classified as a category 1 'excess cold' hazard under the Housing Health and Safety Rating System (HHSRS) compared to the owner occupier sector (6.0%). In 2011-12, there were around 24,000 excess deaths in England and Wales as a result of inadequately heated homes²⁰.

1.2 Non-domestic PRS

1.2.1 Scale of the problem

13. There are around 1.2 million non-domestic PRS hereditaments²¹ in the non-domestic PRS, comprising around 66% (by value)²² of the non-domestic stock.
14. EPC records from registry for England and Wales²³ show that around 10% of registered non-domestic buildings had an EPC rating of G, while a further 8% had an 'F' rating (see the figure below)²⁴. Using the assumption above, this suggests that around one-in-five (or around 0.2 million hereditaments) of the non-domestic PRS stock fall within the lowest energy efficiency bands. There is therefore a large opportunity to drive improvements in the energy efficiency of buildings in the non-domestic sector.

¹⁵ In Wales, a household is defined as being in fuel poverty if they need to spend more than 10% of their income on energy. In July 2013 the Government announced its intention to move away from the current definition of fuel poverty in England, and adopt in its place a new *Low Income, High Costs* indicator (DECC (2013). *Fuel Poverty: Changing the framework for measurement. Government Response*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211135/government_response_fuel_poverty_consultation.pdf) Under this new approach, an English household is considered to be fuel poor if: (i) They have required fuel costs that are above typical levels (the national median level); and (ii) Were they to spend that amount, they would be left with a residual income below the official poverty line.

¹⁶ DECC (2013). *Fuel Poverty: A Framework for Future Action*. Available at: <https://www.gov.uk/government/publications/fuel-poverty-a-framework-for-future-action>

¹⁷ DECC (2013). *Fuel Poverty Detailed Tables* (based on the 2011 English Housing Survey). Available at: <https://www.gov.uk/government/publications/fuel-poverty-2011-detailed-tables>

¹⁸ Source: <https://www.gov.uk/government/publications/fuel-poverty-2011-detailed-tables>

¹⁹ Details of what constitutes a decent home can be found within the following DCLG guidance https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7812/138355.pdf

²⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/199827/Indicators_Text_2013_FINAL.pdf

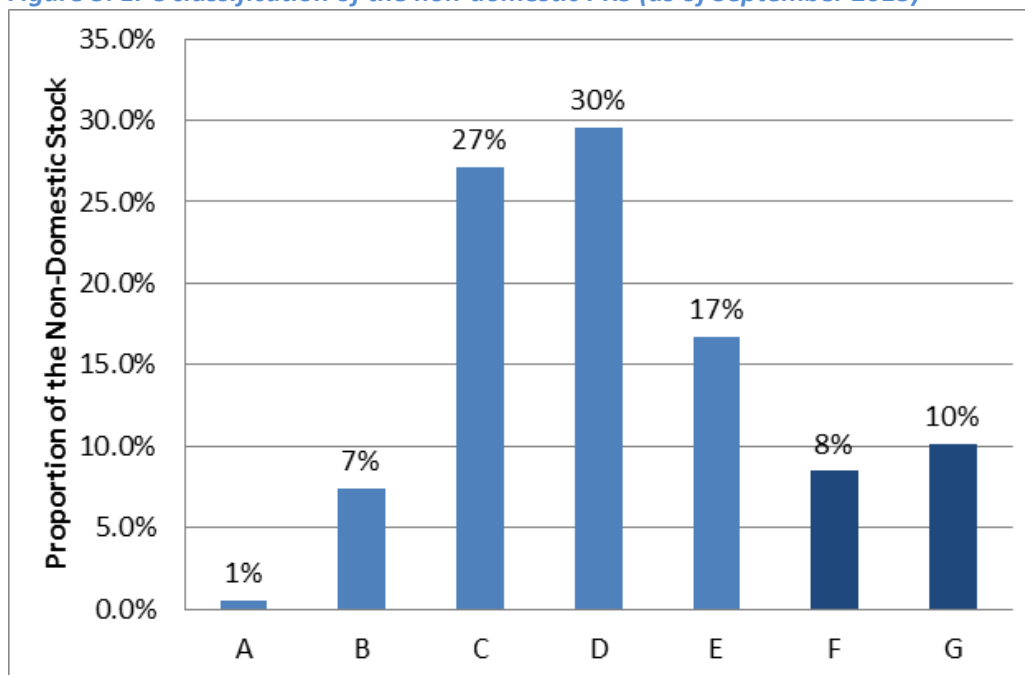
²¹ A hereditament is a unit of property space to which business rates are applied.

²² Measured by property value. Source, The British Property Federation http://www.bpf.org.uk/en/files/reita_files/property_data/BPF_Property_Data_booklet_2013_spreads_web.pdf

²³ Source: DECC analysis of data from Landmark <http://www.landmark.co.uk/>

²⁴ The EPC coverage in the non-domestic PRS is around 23%, and we have made the assumption that the distribution of EPC ratings across this subset of the building stock is representative of the overall non domestic building stock.

Figure 3: EPC classification of the non-domestic PRS (as of September 2013)



Source: Landmark; DECC

15. The non-domestic PRS is already covered to some degree by other policies (i.e. the Carbon Reduction Commitment (CRC) and Climate Change Agreements (CCAs)). However, these policies do not cover the entire non-domestic building stock²⁵. There are currently no policies incentivising improvements in energy efficiency in the non-domestic PRS stock which may result in no action amongst some of the most energy inefficient properties.

1.2.2 Lease length in the non-domestic PRS

16. Details of the average lease length of properties within the non-domestic PRS is shown in Table 2 below. Lease length in the non-domestic PRS tends to be longer than the domestic PRS, with the average tenancy being around 4.1 years for small- and medium- sized enterprises (SMEs) and around 5.2 years for large companies²⁶. For SMEs, just over one-in-five leases was greater than five years in length, while for large companies nearly one-in-three had a lease length of over five years. Data on length of occupation (i.e. including lease renewals or extensions) is not available.

Table 2 PRS Commercial Property Lease Lengths

	1-5 Years	6-10 Years	11-15 Years	16-20 Years	>21 Years	Average Length
SMEs (%)	78.3	19.2	2.1	0.2	0.2	4.1 Years
Large Companies (%)	68.6	23	6.8	0.9	0.6	5.2 Years

Source: British Property Federation/ Investment Property Databank

²⁵ For example, we estimate that 37-40% (or 57-67TWh) of business (non-SME) electricity use is not covered by the CRC or CCA and up to 9% (or 30 TWh) of non-SME other energy use is not covered by the CRC, CCA or EUETS https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211471/130521_Energy_Audits_IA_v28_clean.pdf.

²⁶ Source BPF/IPD Annual Lease Review 2012 http://www.bpf.org.uk/en/files/bpf_documents/commercial/BPF_IPD_Annual_Lease_Review_2012.pdf. Lease lengths have been used as a proxy for tenancy length, as there is no data on the length of tenancy.

1.3 Summary

17. Although improvements have been made to the energy efficiency of the PRS stock, there remains a sizeable stock of properties where the uptake of energy efficiency measures has been low. There are an estimated 0.4 million and 0.2 million properties in the domestic and non-domestic PRS respectively that are required to have an EPC, and where the EPC rating is below 'E'. Living in the domestic PRS has also been identified as a factor that increases the likelihood of a household being fuel poor.

2. Rationale for Government Intervention

2.1 Barriers to Uptake of energy efficiency improvements in the PRS

2.1.1 Misaligned incentives

18. For properties in the PRS, the costs of installing energy efficiency measures traditionally fall to landlords, and the benefits of lower energy use and bills and a warmer property usually fall to tenants. In principle, in a well-functioning market, rent levels should fully reflect differences in a property's energy efficiency thus overcoming this split incentive issue. However, the presence of other market failures, such as imperfect information on the costs and benefits associated with energy efficiency measures, rents may not fully reflect differences in energy efficiency. This leaves landlords with little incentive to make energy efficiency improvements.
19. The Green Deal will partially overcome these market failures, as tenants rather than landlords pay for the energy efficiency improvements (through Green Deal credit repayments) and benefit directly from lower fuel bills (see Annex D for further details on the Green Deal and other funding mechanisms available). However, where there are short tenancies, the benefits from installing energy efficiency measures will be spread across several tenancies, making tenants less likely to be interested in improvements, particularly if they involve hidden costs to the tenant. Further action is, therefore, needed in the PRS to overcome the incentive problem (which is exacerbated by high tenant turnover in the sector).

2.1.2 Imperfect information

20. When individuals cannot or do not accurately assess the costs and benefits to themselves, this can lead to suboptimal choices. This can arise due to inaccurate or incomplete information, or where the information is uncertain or misunderstood. Within the energy efficiency market the uptake of measures may be hampered by imperfect information on the benefits of action, lack of trusted information for consumers (including businesses), and/or inadequate access to, or understanding of, information on energy efficiency measures available to them²⁷.

2.1.3 Landlord inertia

21. The Carbon Trust's 2009 'Building the Future Today'²⁸ found that a large number of barriers and complexities combine in the non-domestic property sector to create a 'circle of inertia'. Further, a Harris interactive poll of private landlords in 2009²⁹ revealed that:
 - (i) 54% of private landlords who think their properties have un-insulated lofts are not considering insulating them in the future; and
 - (ii) 64% of private landlords who think they have un-insulated wall cavities in their rental properties are not considering filling them in the future.
22. Bounded rationality may account for some of the inertia. However, psychological and cultural factors, such as aversion to a perceived debt and social norms, may also be contributing factors³⁰.

²⁷ Royal Institute for Chartered Surveyors (2010) "Energy Efficiency and Value Project" noted a lack of consistent or easy to access information on energy efficiency and found that this influenced a low level of demand for energy efficiency measures. DECC's consumer research (2011) shows that after requests for lower heating costs, having access to convincing information about benefits and information from a trusted source are the main reasons given for what would encourage people to make their homes more energy efficient.

²⁸ http://www.carbontrust.com/media/77252/ctc765_building_the_future_today.pdf

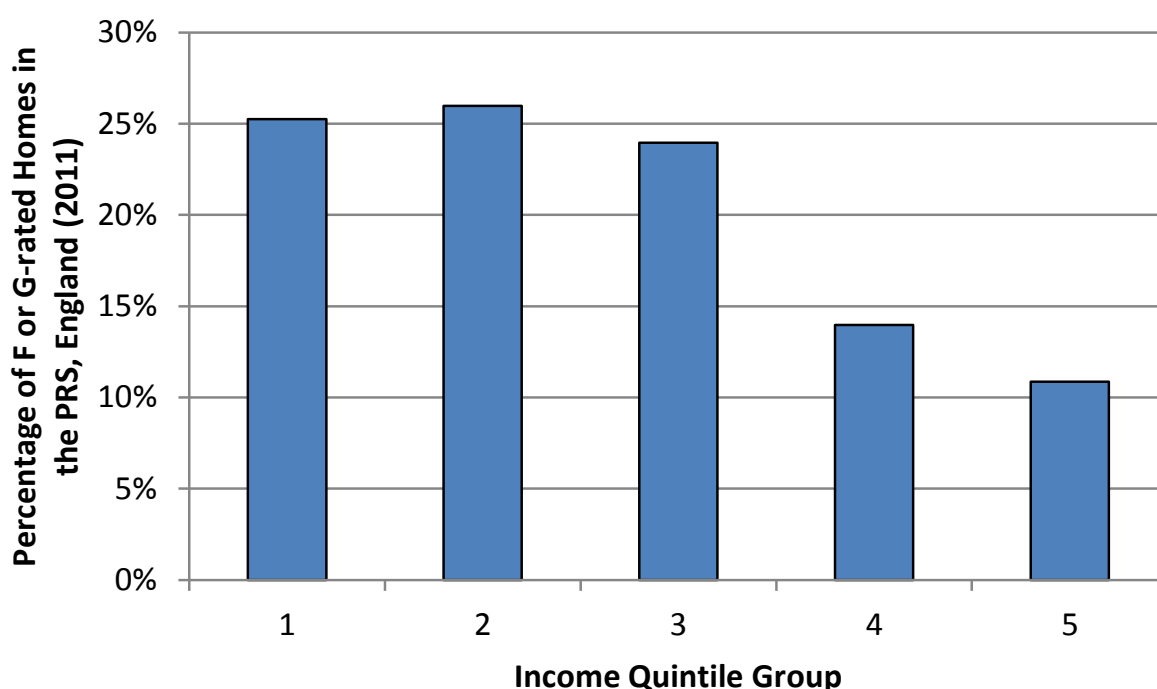
²⁹ Private Landlords Research "Harris Interactive (February 2009) for EST and EEPH; EST research

2.2 Equity

2.2.1 Address the drivers of fuel poverty

23. The barriers to improving standards in the least energy efficient properties in the PRS, outlined in Section 2.1, are compounded by equity concerns relating to the disproportionate share of F or G-rated PRS homes that are lived in by households on low incomes (see Figure 4). Households on lower incomes typically face the greatest trade-offs between using their constrained resources to adequately heat their homes and spending on other basic essentials, and those that face the overlapping challenges of living on a low income and facing high energy costs are defined as living in fuel poverty.³¹ The Government’s Strategic Framework for fuel poverty was published in July 2013³², and showed that living in the PRS was an independent and significant risk factor for being in fuel poverty. This is illustrated in Figure 5, which shows the disproportionate share of fuel poor households in England that live in the PRS (33%) compared to the general population (17%).

Figure 4: Distribution of ‘F’- or ‘G’- rated households in the PRS, by income quintile group (England, 2011)



Source: EHS, 2011-12

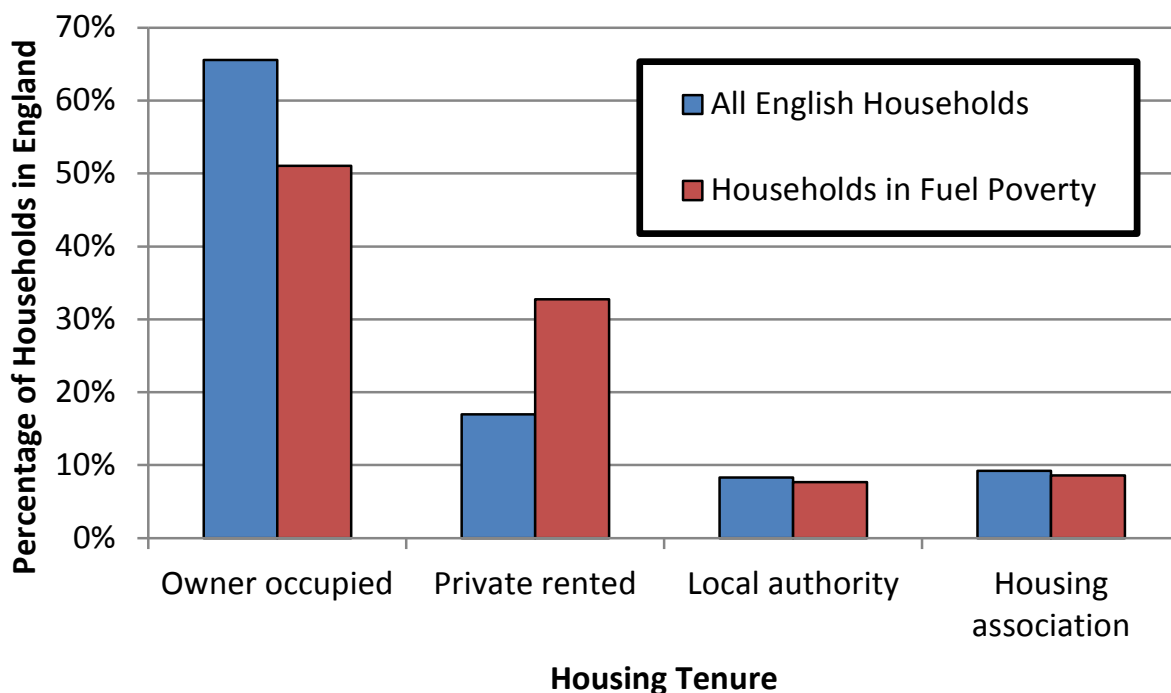
³⁰ Cabinet Office and Institute of Government (2010) “MINDSPACE influencing behaviour through public policy”, cites a range of studies that describe situations where people tend to stick to default behaviours, adhere to “norms” of behaviour and respond differently to information that comes from different sources.

³¹ England and Wales apply different definitions of fuel poverty – in England the Low Income, High Costs approach is applied, whereas in Wales a household is currently defined as being in fuel poverty if they would need to spend more than 10% of their income on energy to maintain an adequate heating regime. For more details see:

<https://www.gov.uk/government/consultations/fuel-poverty-changing-the-framework-for-measurement>

³² Available at: <https://www.gov.uk/government/publications/fuel-poverty-a-framework-for-future-action>

Figure 5: Distribution of fuel poor households versus all households across housing tenure (England, 2011)

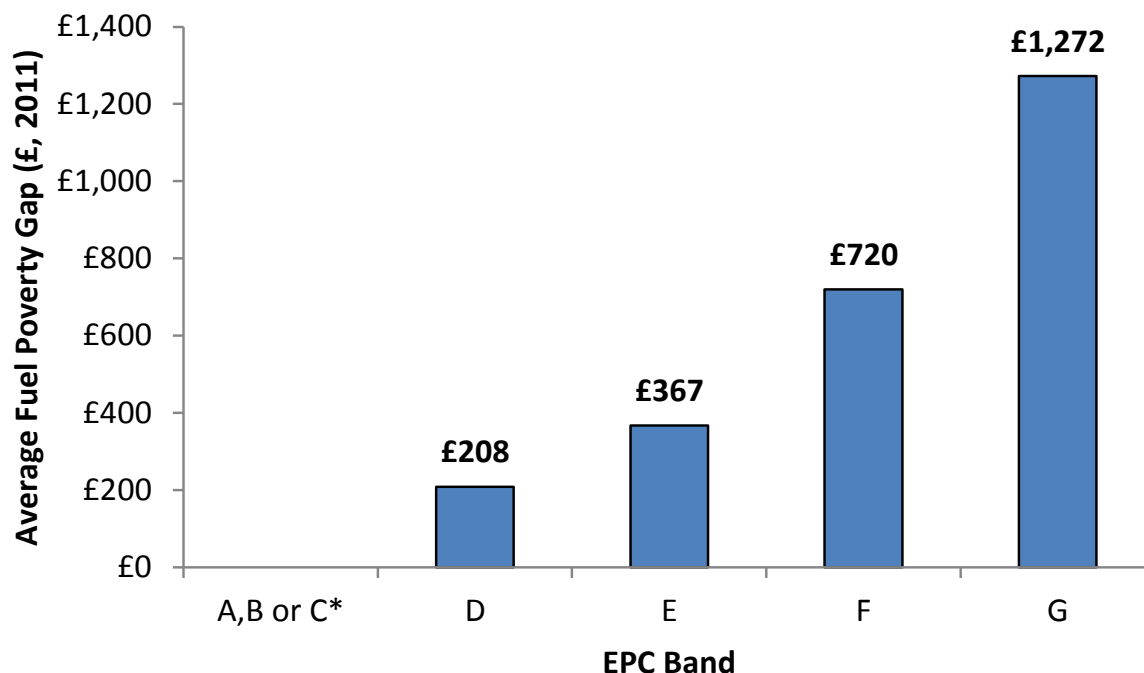


Source: EHS, 2011-12

24. The Fuel Poverty Strategic framework also set out a number of key principles for supporting the fuel poor – prioritising those facing the most severe problem, supporting them with cost-effective interventions, and ensuring policies reflect considerations of vulnerability. Fuel poor households facing the most severe problem are typically defined according to their ‘fuel poverty gap’ – the energy costs they face above and beyond typical levels for their house type.³³
25. Figure 6 shows the fuel poverty gaps for fuel poor households in the PRS in England, broken down by EPC-rating. There is a stark gradient, whereby those in the least efficient properties – in particular ‘F’- and ‘G’-rated PRS properties – face significantly larger fuel poverty gaps (and therefore to a large extent the most severe problem) than those in more efficient properties. The barriers to improving the efficiency of homes in PRS outlined in Section 2.1 imply that those fuel poor households facing some of the starkest trade-offs between keeping their homes adequately warm and spending on other essentials are effectively ‘locked in’ to this problem.

³³ For more detail on the fuel poverty gap, please see: <https://www.gov.uk/government/publications/fuel-poverty-a-framework-for-future-action>

Figure 6: Average fuel poverty gaps for fuel poor households in the PRS, by EPC band (England, 2011)



Source: EHS, 2011-12

* Small samples mean estimate is not shown.

26. The independent Hills Fuel Poverty Review identified that poor domestic energy efficiency was a key driver of fuel poverty³⁴, and that improving the energy efficiency of fuel poor homes was the most cost-effective and sustainable way of alleviating the problem.³⁵ In principle, therefore, addressing the energy efficiency of PRS households should not only help address a root cause of fuel poverty, but also do so in a way that is in line with the principles set out in the Government’s Strategic Framework.
27. The extent to which fuel poor households realise a reduction in their fuel costs from raising energy efficiency in the PRS is, however, dependent on the delivery mechanism used to drive these improvements. A mechanism whereby tenants fully or part-finance the cost of measures, for example through the Green Deal where repayments are made over time through a household’s electricity bill, will to some extent offset fuel cost savings. This would also offset the extent to which a fuel poor household’s fuel poverty gap is reduced from improvements in their energy efficiency.
28. However, a requirement for measures to meet the ‘Golden Rule’ under the Green Deal, as well as the right for households to refuse measures, should mean that fuel poor households taking up measures in the PRS will directly experience some level of fuel bill savings. This would also deliver an equivalent reduction in their fuel poverty gap. Further, alternative funding streams for low income households that fully subsidise or cover a proportion of the upfront cost improvements without requiring repayments, such as Local Authority grants or the Affordable Warmth element of the ECO, would mean that PRS households would benefit fully from reductions in their energy costs. In addition, regardless of delivery mechanism, improvements in the

³⁴ Hills (2011). *Fuel Poverty: The Problem and Its Measurement*. Available at: http://sticerd.lse.ac.uk/dps/case/cr/CASereport69_Executive_Summary.pdf

³⁵ Hills (2012). *Getting the measure of fuel poverty*. Available: <http://sticerd.lse.ac.uk/dps/case/cr/CASereport72.pdf>

energy efficiency of PRS homes should also drive a higher level of thermal comfort resulting in positive health effects (see Section 2.2.2 below).

29. As a result of energy efficiency-driven reductions in energy costs (particularly once any Green Deal repayments are completed), landlords may have the incentive to capture the benefits of these lower energy costs by increasing the rent charged to their tenants. Were this to be the case, households living in the PRS could face a reduction in their disposable income as a greater share of their resources go towards paying rent, potentially increasing their risk of falling into fuel poverty.³⁶ However, as highlighted in Section 2.1 above, there are significant informational barriers to rent payments increasing in this way; and were Landlords able to overcome these barriers, market pressures would limit any ability to increase rents beyond any fuel bill savings tenants may experience.

2.2.2 Improving tenant health

30. Living at low temperatures poses a risk to health, with a range of negative morbidity and mortality impacts associated with exposure to the cold. The Marmot Review Team report on cold homes and health³⁷, in addition the Hills Fuel Poverty Review³⁸, set out the strong body of evidence linking low temperatures to these poor health outcomes – in particular the cardiovascular and respiratory illnesses that drive the number of excess winter deaths each year.
31. Poor energy efficiency standards, and high energy costs driven by poor energy efficiency, have been shown to be robustly linked to lower indoor temperatures³⁹, while the English Housing Survey Energy Follow Up Survey shows a clear correlation between low energy efficiency, and low average dwelling temperatures during the winter heating season (Figure 7). Households in the PRS facing the barriers to upgrading the efficiency (outlined in Section 2.1) therefore risk being ‘locked in’ to low temperatures and the subsequent negative health outcomes.

³⁶ ‘Low income’, as defined under the Low, Income High Costs definition of fuel poverty in England, is measured ‘after housing costs’ such that an increase in rent a household has to pay would be reflected as a reduction in income, thereby increasing the likelihood of a household living in an F or G-rated home in the PRS falling into fuel poverty (i.e. facing both high costs from living in an inefficient dwelling *and* being in a low income).

³⁷ Marmot Review Team (2011). *The Health Impacts of Cold Homes and Fuel Poverty*. Available at:

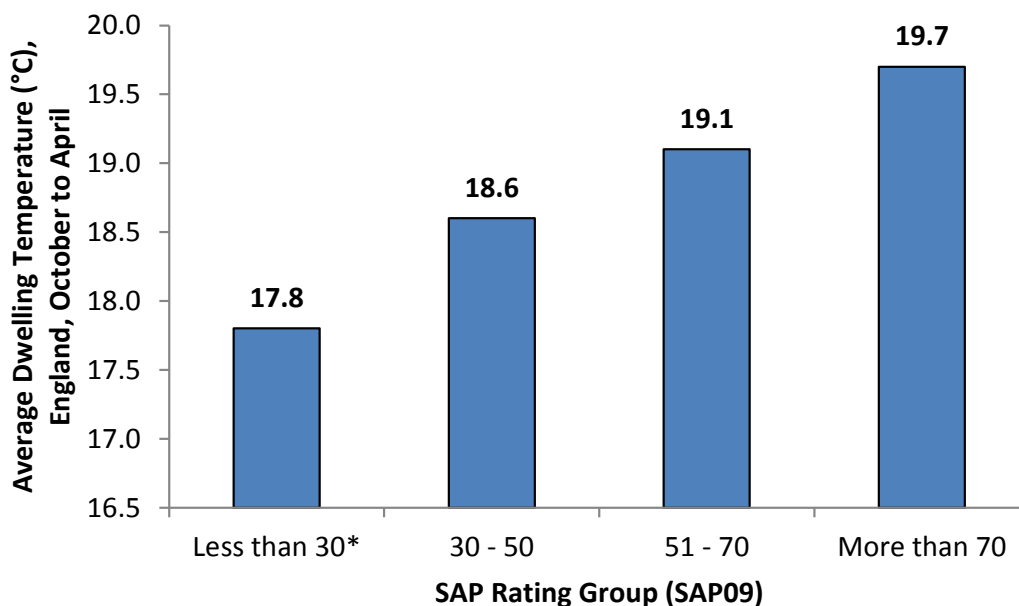
<http://www.instituteofhealthequity.org/projects/the-health-impacts-of-cold-homes-and-fuel-poverty>

³⁸ Hills (2011). *Fuel Poverty: The Problem and Its Measurement*. Available at:

http://sticerd.lse.ac.uk/dps/case/cr/CASereport69_Executive_Summary.pdf

³⁹ See Wilkinson et al (2001). *Cold Comfort: the social and environmental determinants of excess winter deaths in England, 1986-96*.

Figure 7: Average dwelling temperatures during winter heating season, by SAP rating band

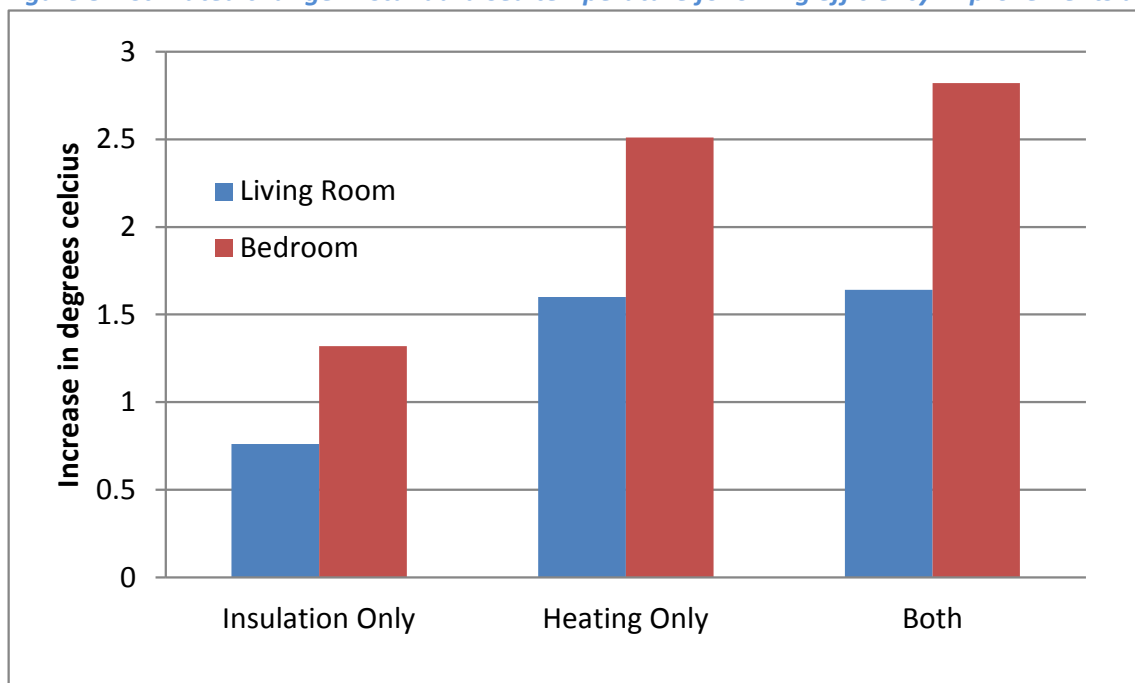


Source: English Housing Survey Energy Follow Up Survey⁴⁰

* Small samples mean potentially high sampling errors

32. Improving the energy efficiency of homes has been demonstrated to improve indoor temperatures significantly, with the implication of reduced health risks as a consequence. The evaluation of the Warm Front scheme in 2008 monitored the impact of heating and insulation improvements on indoor temperatures, demonstrating the significant effect that energy efficiency interventions can have on indoor comfort levels (Figure 8).

Figure 8: Estimated change in standardised temperature following efficiency improvements under Warm Front

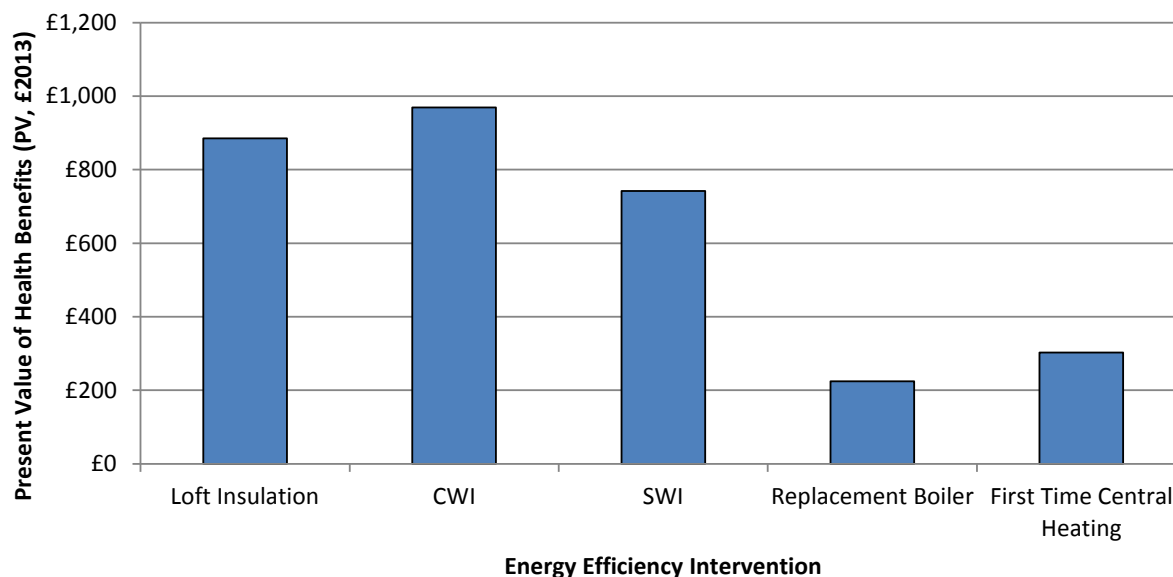


Source: Green and Gilbertson (2008)⁴¹

⁴⁰ 2011 Energy Follow Up Survey Temperature Report, available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274770/2_Mean_Household_Temperatures.pdf

33. In terms of the health improvements associated with specific energy efficiency interventions, DECC has been developing a methodology to estimate and quantify the change in Quality Adjusted Life Years (QALYs) – an official measure of health outcomes. Estimates of the value of individual interventions in terms of their impact of improved health outcomes were published in the July 2013 Fuel Poverty Strategic Framework, demonstrating the potential benefits to society (per measure) from improving the energy efficiency of homes (Figure 9). The potential benefits of health improvements from energy efficiency interventions could in some instances, for example low cost loft insulation, even outweigh the cost of installation.

Figure 9: Estimated value of lifetime health benefits per energy efficiency improvement (2013 prices)



Source: Fuel Poverty Strategic Framework (2013)⁴²

⁴¹ Green, G. and Gilbertson, J. (2008). Warm Front, Better Health. Available at: <http://www.apho.org.uk/resource/view.aspx?RID=53281>

⁴² Available at: <https://www.gov.uk/government/publications/fuel-poverty-a-framework-for-future-action>

3. Policy Objectives

3.1 Main policy objectives

34. The Government seeks to improve the energy efficiency of buildings in the PRS. To help achieve this the Government included within the Energy Act 2011 a duty on the Secretary of State to bring into effect regulations for England and Wales so that by 1 April 2016 domestic private tenants can request consent to energy efficiency improvements that may not unreasonably be refused by their landlord, and by 1 April 2018 domestic and non-domestic privately rented property must meet a prescribed minimum energy efficiency standard (as determined by a property's EPC), to be lettable. In tackling the energy efficiency of the PRS, the Government will also address a root cause of fuel poverty.

35. The policy design also ensures:

- **No upfront costs to landlords.** In this context, upfront costs mean the capital costs of installing energy efficiency measures required to improve the EPC rating of the property. Enabling a landlord to take out Green Deal finance (provided they meet the Golden Rule), which may be subsidised by the ECO funding or local authority grants, means that landlords will not be required to pay upfront for the costs of energy efficiency improvements. The ancillary costs could include assessment costs⁴³, a proportion of the hidden costs⁴⁴, the opportunity cost of a landlord's time spent to understand the Regulations and any other costs associated with the installation of energy efficiency measures (for example, on the rare occasion that planning permission is needed). These costs, however, are likely to be absorbed by the market (for example in terms of Green Deal Assessments, which can be offered for free through ECO or refunded should installation occur) passed onto tenants over time through marginal increases in rent (should market conditions permit this), or recovered through capital appreciation.
- **No net costs to landlords.** Landlords should not incur net costs for installing improvements required under the Regulations for the lifetime of the improvements. The overall net impact of the Regulations depends in part on how costs and benefits are distributed between landlords, tenants, and other parties, and the extent to which the benefits of energy efficiency are reflected in rent and property values.

3.2 Broader policy objectives

36. Improving the thermal and lighting efficiency of domestic properties should increase the demand for energy efficient measures and reduce domestic demand for energy. These outcomes will help the Government to achieve its broader objectives which include to:

- Reduce UK greenhouse gas emissions;
- Increase the security of energy supply (which also decreases peak demand and price volatility); and
- Support economic growth, jobs in the green construction industry and investment in domestic dwellings and commercial buildings.

37. Further details on the broader objectives can be found in Annex A.

⁴³ However, around 80% of Green Deal assessments are currently being offered for free, with the costs recovered through the Green Deal loan repayments. Source:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/271608/Waves_1_2_and_3_plus_wave_1_follow_up_full_report_P23_-_24_-_FINAL.pdf

⁴⁴ Hidden costs are the time and financial costs when implementing a measure. For example, they include the disruption costs associated with the installation of measures, the time taken to research and organise the installation of measures and costs of redecoration after the measures have been installed.

4. Policy Options

4.1 Rationale for regulation

38. The Regulations to be brought into effect under these provisions are needed to overcome the split incentive and inertia problems that are exacerbated by high tenant turnover in the PRS - particularly in the domestic sector. Under the Minimum Energy Efficiency Standard Regulations, it is the landlord rather than tenant that is required to initiate the energy efficiency improvement. This means that short tenancy lengths would not act as a barrier to the uptake of energy efficiency improvements. Landlords would also not have to cover the cost of measures under this arrangement as the tenants (who would benefit from lower fuel bills) would fund the energy efficiency improvements through Green Deal credit repayments attached to their fuel bills, or through ECO, local or national grants. All the funding options ensure there are no involuntary upfront costs to landlords for the energy efficiency measures.
39. The Regulations will overcome information barriers through the Green Deal and ECO. The Green Deal requires advisors and installers to be accredited and they provide trusted sources of information on energy efficiency measures. The Green Deal also provides a flexible market framework for facilitating branded suppliers with existing customer relationships to come forward and market their services, as well as a financing option.

4.2 Policy Option 0 – do nothing option

40. This option assesses the situation in the absence of intervention. This is the baseline to compare the impact made by options 1 – 3 below. In the do nothing option, the barriers and market failures identified earlier will remain and will prevent the Government from achieving its main objective of improving the energy efficiency of buildings in the PRS.

4.3 Policy Option 1 -the preferred option

41. The preferred option is for the tenants' right to request improvements regulations and minimum energy efficiency standard regulations, required under the Energy Act 2011, to be implemented as follows:
42. **Component (1)** From 1st April 2018, under the 'soft start' to the Regulations, all new lettings of applicable private rented properties in the domestic and non-domestic sectors should be brought up to a minimum EPC rating of an 'E' if this can be achieved with no upfront costs. The intention is that landlords would fulfil this requirement if the property had either reached an 'E' threshold or carried out the maximum package of measures that can be funded under the Green Deal, ECO, national or local grants (or a combination of these), even if this does not take them to an 'E' rating.
43. **Component (2)** From 1st April 2016, landlords of a domestic property may not unreasonably refuse requests from their tenants for consent to energy efficiency improvements, where financial support is available that ensures no upfront costs to landlords for the measures, such as the Green Deal, the ECO, tenant's own funds, or national or local authority grants.

4.3.1 Scope of the Regulations

44. The Energy Act 2011 places a duty on the Secretary of State to implement the Regulations in England and Wales. It also provides powers to Scotland to implement similar regulations, but their use is for the Scottish Government to determine.

4.3.2 Coverage

45. Exclusions are properties or leases/tenancies that are not affected by the Regulations. The PRS minimum standards Regulations would apply to all rented properties in England and Wales that require an EPC under

existing Energy Performance of Buildings (England and Wales) Regulations 2012. Therefore the Minimum Energy Efficiency Standard Regulations would apply to any rented property, let on an eligible tenancy, that:

- i. Has an EPC; and
- ii. Would be required to provide an EPC by the Energy Performance of Buildings (England and Wales) Regulations 2012 when they are sold or let⁴⁵⁴⁶.

46. However the PRS regulations are proposed to apply where a building has an EPC and only part of the building is let (such as an individual room) on a PRS tenancy in scope, even though in this situation an obligation under the Energy Performance of Buildings (England and Wales) Regulations 2012, would not apply.

47. In addition to those buildings excluded from having to provide an EPC on sale or let, the following situations are proposed to be excluded from triggering a PRS regulatory requirement:

- non-domestic properties on a short flexible lease (less than six 6 months), where this is not renewed more than twice to the same tenant; and
- those on a very long lease, greater than 99 years in length (where a freeholder grants a long lease to a leaseholder).

4.3.3 Regulatory Backstop

48. The preferred option involves a 'soft start' to the minimum energy efficiency standard Regulations. A 'regulatory backstop', however, would apply after 1st April 2020 (for the domestic PRS) or 1st April 2023 (for the non-domestic PRS), by which point all landlords owning 'F' and 'G' EPC rated properties (including those where the sitting tenant has not moved out since 1st April 2018) must attempt to meet the minimum EPC requirement.

49. The implementation date for the regulatory backstop is based on the discussions and recommendations made by the domestic and non-domestic PRS working groups⁴⁷, which in turn were based on the average tenancy length in the domestic and non-domestic PRS (as discussed in more detail in Section 1).

4.3.4 Rationale for preferred option

50. Policy Option 1 is preferred because it offers flexibility for landlords to comply with the Regulations, as landlords only have to comply with the minimum energy efficiency standard Regulations after 1st April 2018 once a new tenant moves in. This allows for to be carried out during the 'void' period⁴⁸ before the new tenant moves in, thereby reducing disruption to tenants and capitalising on a natural point in a tenancy cycle where improvement works can be undertaken. By phasing in the requirements, there will be fewer landlords and tenants caught by the Regulations mid-tenancy than would be the case if the regulations applied to all tenancies (including those in place) in 2018. This will help ensure a large proportion of the sector will have taken voluntary action before 2018 or will be caught through a change of tenancy between the Regulations coming into effect and the backstop applying.

45

[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307556/Improving the energy efficiency of our buildings - guide for the marketing sale and let of dwellings.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307556/Improving_the_energy_efficiency_of_our_buildings_-_guide_for_the_marketing_sale_and_let_of_dwellings.pdf)

46
[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/50268/A guide to energy performance certificates for the construction sale and let of non-dwellings.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/50268/A_guide_to_energy_performance_certificates_for_the_construction_sale_and_let_of_non-dwellings.pdf)

47 Details and minutes of these meetings can be found on the Government's website <https://www.gov.uk/government/policy-advisory-groups/working-group-on-the-domestic-private-rented-sector-prs-regulations> (domestic working group); <https://www.gov.uk/government/policy-advisory-groups/133> (non-domestic working group).

48 Time when properties offered for rent remain without tenants. In the domestic PRS, the average void period for a property is around 3 weeks, according to the Association of Residential Letting Agents <http://www.arla.co.uk/media/466322/ARLA-PRS-Report-Q4-13.pdf>

51. The inclusion of the backstop date also has the following benefits:

- i. Some properties may be occupied by the same tenant for many years, particularly in the non-domestic sector, as leases are extended, renewed or rolled-over. Without a backstop these properties may not be exposed to the Regulations for an unreasonable amount of time, significantly delaying the point at which improvements must be made;
- ii. In the domestic sector, some PRS tenants have security of tenure (those on Regulated Tenancies). Such tenants remain in place for much longer periods of time than those in the PRS under other tenancy types, potentially remaining in occupation until they die. Therefore, without a backstop, such tenancies may not be affected by the regulations, or would only be affected after a prolonged period;
- iii. A backstop mitigates the risk of landlords of properties rated below the minimum standard strategically managing their tenancies so as to delay taking action, such as renewing leases/tenancies to the same tenant (potentially on favourable terms) or agreeing long tenancies just before the Regulations apply. Such behaviour would undermine the impact of the Regulations when they apply in 2018; and
- iv. The backstop, following an initial soft start, will encourage a smooth building of demand with early movers acting first, and then those properties caught in change of tenant before finally applying to the remaining properties. This will aid enforcement agents and the supply chain to prepare.

4.4 Alternative policy options

52. The alternative options for implementing the Regulations considered below are variants of whether to have a:

- 1) soft or hard start
- 2) regulatory back-stop

4.4.1 Policy Option 2

53. Policy Option 2 is the same as Option 1 above but without a regulatory backstop.

54. Under this scenario, from 1st April 2018, landlords in the domestic and non-domestic PRS will only have to comply with the PRS Regulations once a new tenant moves in. This means some landlords (owning F- and G-rated properties with long lease lengths) may not be required to comply with the Regulations for many years after 1st April 2018.

4.4.2 Policy Option 3

55. This option assumes a 'hard start' to minimum energy efficiency standards stipulated under the Regulations. That is, from 1st April 2018, all domestic and non-domestic landlords letting out a property with an EPC 'F' or 'G' will have to comply with the Regulations.

56. As the secondary legislation for the Regulations is being laid well in advance of the PRS Regulations coming into force, landlords will still have several years to comply with the minimum energy efficiency standards before the minimum energy efficiency standards apply in 1st April 2018. However, once the Regulations are in place, compliance may involve higher disruption to the existing tenants particularly and therefore offer less flexibility for decision-making. Landlords will be able to obtain a temporary exemption from reaching the standard where a sitting tenant refuses consent to improvements or to Green Deal finance being placed on their energy bill.

4.5 Alternatives to regulation

57. Various approaches have been tried in the past to improve the energy efficiency of the PRS. These include voluntary approaches, information services, tax breaks for landlords, and subsidies for the installation of energy efficiency measures. Details of past proposals are discussed in the Impact Assessment for the primary legislation for the PRS Regulations⁴⁹. These approaches have been unsuccessful in overcoming the market barriers described above, meaning insulation levels in the PRS continue to trail other tenures (as discussed in Section 1).

⁴⁹ These are contained within the Energy Act (2011)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48196/3223-EA2011-green-deal-impact-assessment.pdf
(see section D).

5 Analytical approach

58. The aim of the analysis is to:

- (i) Assess the likely uptake of energy efficiency measures in the domestic and non-domestic PRS as a result of the Regulations;
- (ii) Assess the impact of the Regulations on society, through the carbon abatement, the impact on the domestic housing market, improvement in air quality, time costs, and financial impacts;
- (iii) Estimate the distributional impact of the policy, including the distribution of costs borne by landlords and tenants as a result of the Regulations; and
- (iv) Estimate the impact of the Regulations on fuel poverty.

59. The impacts have been appraised according to Green Book⁵⁰ and supplementary guidance⁵¹ and are presented in discounted real 2013 prices, against a counterfactual of no Regulations (although ECO and Green Deal continue to be available).

60. DECC has developed two models to analyse the PRS Regulations for this consultation IA:

- i. Domestic Energy Efficiency Package PRS Model (DEPP)
- ii. Non-Domestic PRS Model

61. Each model is used to estimate the impact of the PRS Regulations on energy efficiency uptake in the respective sectors. Uptake is higher under each option than the counterfactual as landlords move to comply with the Regulations. Landlords are assumed to install measures during 'void periods'⁵², except where the existing tenant is still resident when the 'regulatory backstop' takes effect⁵³.

62. The speed with which they install energy efficiency measures depends on the particular option – for example removing the regulatory backstop allows more time for landlords to comply and so uptake is spread over a longer time period.

63. Measures can only be taken up if all of the following criteria are met:

- i. The building characteristics are such that the measure would be recommended in an EPC;
- ii. The measure(s) is (are) cost-effective (i.e. it meets the Green Deal's Golden Rule, taking into account any available ECO or grant/subsidy); and
- iii. The measures(s) moves the property from an F or G towards an E

64. The models estimate the costs and benefits of each option relative to the counterfactual, along with estimates of the additional amount of carbon saved.

65. More detailed descriptions of the models used for the cost-benefit analysis are included in Annexes E and F.

66. The policy options are appraised for the period between 2014 and 2070. This appraisal period was chosen to ensure consistent treatment of the costs (which are largely incurred in the near term and over a relatively short time period) and benefits (the majority of which are realised further into the future, and accrue over a

⁵⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

⁵¹ <https://www.gov.uk/government/policies/using-evidence-and-analysis-to-inform-energy-and-climate-change-policies/supporting-pages/policy-appraisal>

⁵² Tenant turnover is modelled using the distribution of tenancy durations in Tables 1 and 2 in Section 1.

⁵³ According to the Energy Saving Trust, landlords are much more likely to undertake a whole-house project, using the void period between tenancies to refurbish several rooms in one go. Because they are more often looking at whole-house projects, the budgets they have in mind are also higher.

<http://www.energysavingtrust.org.uk/Publications2/Corporate/Research-and-insights/Trigger-points-a-convenient-truth>

longer time period). In other words, we are seeking to ensure that we fairly capture all the costs and benefits within the analysis. The details of how we arrived at the appraisal period are outlined below.

67. Installed measures are assumed to generate identical energy savings every year until the end of their assumed lifetime⁵⁴, at which point the energy savings generated by that measure fall to zero. The longest lived measures (such as cavity and loft insulation) have an assumed lifetime of 42 years, which means that to capture all of the energy saving benefits from these measures, the appraisal period would need to run until the last of these long-lived measures has expired. This approach of ensuring that the benefits are captured over the full lifetime of the measures is in line with Green Book Guidance⁵⁵
68. Uptake of measures occurs until the late 2020s under the soft start within the non-domestic PRS, and so, for the reasons outlined above, the appraisal period would need to run for 42 years after the last of the long-lived measures has been installed. This leads to an appraisal period of 57 years (between 2014 and 2070). A shorter appraisal period than this would exclude some of the benefits from the impact analysis. As the costs, however, are generally incurred earlier in the appraisal period, they would not be excluded to the same degree under the shorter appraisal period, which would lead to unequal treatment of the costs and benefits. A longer appraisal period than 57 years, meanwhile, is not required - as all of the costs and benefits will have already been realised by 2070 under all of the options.

⁵⁴ DECC's assumptions on the lifetime of energy efficiency measures can be found here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69753/InformationSupplyChainFINAL.pdf

⁵⁵ Paragraph 5.10 of the Green Book

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf states "costs and benefits considered should normally be extended to cover the period of the useful lifetime of the assets encompassed by the options under consideration".

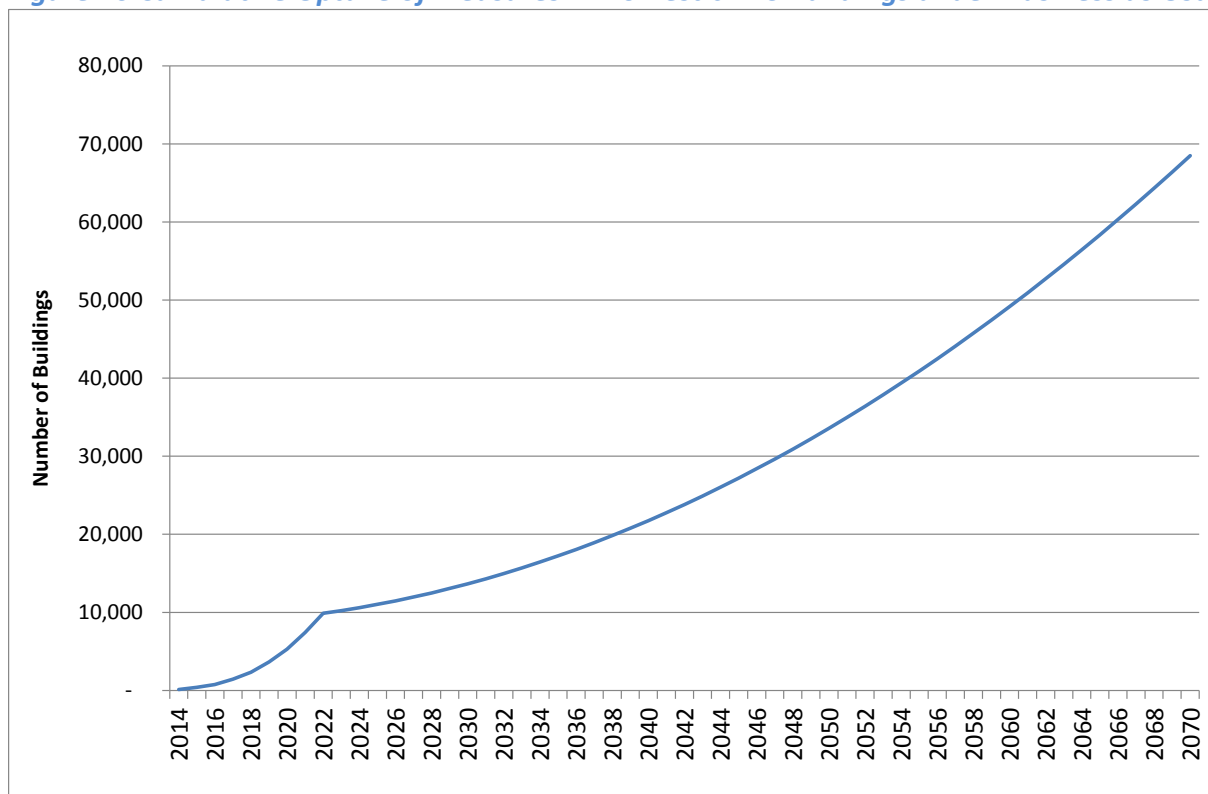
6. Counterfactual

6.1 Domestic Counterfactual

69. Some energy efficiency measures are expected to be taken up in the absence of PRS Regulations, but the rate of improvement has historically been lower than for owner occupied households, as highlighted in Section 1. This trend is expected to continue in the absence of the Regulations.
70. Counterfactual uptake of energy efficiency measures is taken from the Green Deal Household Model (GDHM). This internal DECC model is used to estimate the impact of the Green Deal and ECO on different household types, and provides an estimate of the level of uptake that could be expected under existing policies, i.e. with ECO but excluding the Regulations. The model estimates (for properties due to be covered by the Regulations) the proportion of households that come forward each year to consider installing a measure (either loft insulation, cavity wall insulation or solid wall insulation), the proportion of those houses that decide to invest, and how many of these meet the Golden-Rule, in the absence of the Regulations. As the GDHM considers only the three main insulation measures (set out above) as a gateway into improving a property's energy efficiency, it probably under-estimates the total size of the counterfactual uptake because of those households that will undertake measures in addition to the three measures captured in the GDHM⁵⁶.
71. The domestic model, described in Annex E, takes the counterfactual take-up from the GDHM and nets off the buildings that would have acted in the absence of the Regulations from the total improvement in the building stock, to determine the costs and benefits of the Regulations. The interaction with ECO means that some of the PRS uptake beyond the counterfactual's level has been removed from the policy's costs and benefits to account for displacement of ECO funding. That is, because the Regulations are expected to bring forward alternative ways for energy suppliers to meet their obligations (poorly insulated properties within the PRS), the Regulations may displace ECO funding that would have otherwise subsidised abatement opportunities in other tenures. Where this is the case, the savings are not deemed additional.
72. The counterfactual is shown in Figure 10 below. As the Government has previously confirmed, the obligation is intended to be both ambitious and long-term, extending through until at least 2022 but previous targets were set only until 2015, which meant that there was a lack of long-term certainty for the supply chain and others interested in delivery. The conclusions in the Government's response to the recent Future of ECO consultation should provide longer term certainty by extending the scheme through to 2017. For the purpose of modelling in this IA, ECO reflects the government's longer term intention for ECO and is assumed to continue until 2022. Without ECO to partially or fully subsidise energy efficiency improvements within the sector, fewer properties are assumed to make energy efficiency improvements, which means the annual rate of uptake slows after 2022.

⁵⁶ We are looking to model the counterfactual uptake of the wider set of measures available to households in the final IA. The extent of under-estimation inherent in the model as it stands is limited, as it assumes that households will install measures in the order they are presented in the EPC, and only if they meet the Golden Rule. For instance, measures such as draft-proofing, which may be installed in the counterfactual as a single measure in the DIY market, are only taken up with other measures within the model as part of a whole package. This limits the overlap between modelled take-up and the counterfactual.

Figure 10 Cumulative Uptake of measures in Domestic PRS Buildings under Business as Usual 2014 - 2070



Source: (DECC) Green Deal Household Model

6.2 Non-Domestic Counterfactual

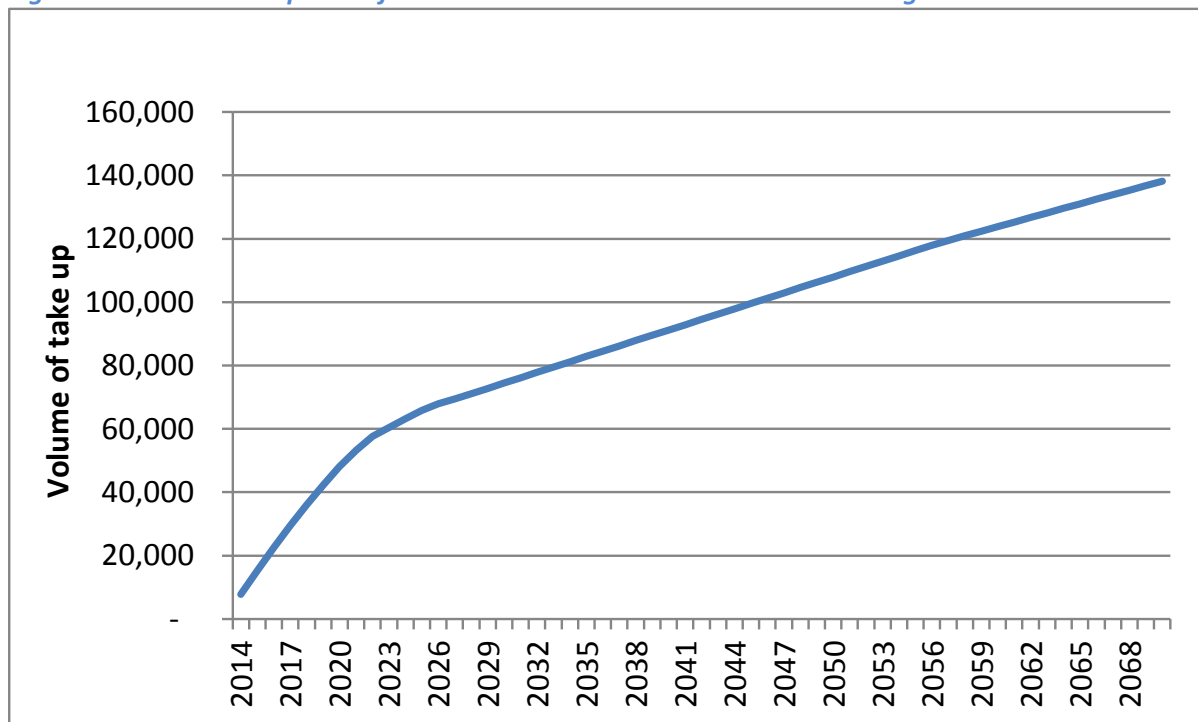
73. The 2012 Green Deal/ECO final Impact Assessment presented a business-as-usual take-up profile for a number of energy efficiency measures. This analysis was conducted by Element Energy⁵⁷ and modelled the remaining potential and uptake of non-domestic energy efficiency measures. This uptake has been used as a basis for modelling the counterfactual uptake in the non-domestic PRS model. The measures and packages of measures are applied to non-domestic properties according to the most frequently recommended measures to different property types, according to EPC assessment reports. The volume of these packages taken up in the absence of the Regulations is illustrated in Figure 11 for the entire F&G rated stock.

74. Where the BAU profile is not available from the Element Energy report for given measures, the average BAU uptake across all energy efficiency measures was used. Where a package of measures, with different uptake rates of measures occurs, the average of the combined measures' rates was used. Here it is assumed that the measures taken up in the BAU will consist of those deemed to be cost-effective within ten years⁵⁸. Cost effective measures with a longer payback will therefore be excluded. The business as usual uptake is shown in Figure 11 below. It shows a drop off in the rate of uptake under the business as usual in the 2020s, as the most cost effective potential in the non-domestic PRS starts to decline.

⁵⁷ Element Energy – Uptake of Energy Efficiency in Buildings – 2009. This study reports uptake of measures as a result of the CRC Energy Efficiency Scheme, based on the assessment of these scheme at that time. This means uptake as a result of this scheme will be contained within our non-domestic counterfactual. <https://www.gov.uk/government/policies/reducing-demand-for-energy-from-industry-businesses-and-the-public-sector--2/supporting-pages/crc-energy-efficiency-scheme>. The legislation for the Energy Savings Opportunity Scheme, meanwhile, had not been laid at the time the modelling for this IA was being finalised. ESOS assessments will highlight the opportunities for companies to reduce their energy bills through cost-effective improvements, which could include upgrading buildings or moving to more energy efficient buildings, and therefore will be complementary to the PRS regulations. However, it has not been possible to quantify the impact of this interaction

⁵⁸ Green Deal loans within the non-domestic PRS have been capped at 10 years as a modelling simplification, reflecting the fact that many measures within the non-domestic PRS lifetime of 10 years or less.

Figure 11 Cumulative uptake of measures in the non-domestic PRS buildings under Business as Usual 2014-2070



Source: (DECC) Non Domestic PRS Model

7. Categories of Costs and Benefits

7.1 Costs

75. The following costs are accrued by landlords, tenants and wider society.
76. **Installation costs.** This is expected to be the largest individual cost of the Regulations. Installing energy efficiency measures involves an up-front cost, associated with buying and physically installing the relevant items. However, the Regulations only require landlords to install measures if the installation costs can be funded through Green Deal finance. Therefore, where there are costs, they would be borne by the energy bill payer through Green Deal credit repayments. Further, measures need only be installed provided they meet the Golden Rule. ECO subsidies or local authority grants should increase the number of measures that can be installed cost effectively under the Golden Rule for domestic properties.
77. As part of the Autumn Statement 2013, a suite of incentives were announced to support the uptake of energy efficiency measures. The funding is due to last until 2017, before the Regulations come into effect. The precise details of the incentive schemes to be offered have yet to be announced, however landlords may use such support to aid them reach the minimum standard before the regulations take effect.
78. For the purposes of this IA, we do not assume any reductions in the real costs of installations over time. In practice, technological improvements and increased competition may lower the costs of installing energy efficiency measures and therefore lower the costs of the Regulations. We also do not expect the costs to rise over time, either, as it is assumed that the supply chain can meet the additional demand for energy efficiency measures without hitting capacity constraints.
79. **Financing Costs.** Green Deal financing costs are met by the energy bill payer – often the tenant - as part of their fuel bill whilst the property is occupied. Financing costs include the interest, and one-off and on-going Green Deal charges attached to any Green Deal credit⁵⁹. As with the installation repayments, they are spread out over the lifetime of the plan. Should the tenant or landlord decide to pay off the Green Deal early, there may be early repayment charges. However, as these are incurred voluntarily, they are not modelled in this IA. In reality landlords may choose to do work at cheaper finance rates and recover costs through other means for instance marginally higher rents. We will seek evidence on landlords' likely financing behaviour during the consultation period.
80. **Assessment Cost.** As part of the Green Deal, an accredited Green Deal Assessor will recommend cost effective energy saving measures a landlord could install to improve the property's energy efficiency and reduce its electricity bill. The landlord may be charged for this assessment. However, a recent DECC survey showed that around 80% of such assessments in the domestic sector are currently being provided free of charge⁶⁰. For the purposes of this IA, we have assumed that for those paying for the assessment in full, the assessments are charged at £112.50 in the domestic PRS and £698 in the non-domestic PRS⁶¹. In addition, landlords are already required to have a valid EPC upon letting the property. The cost of an EPC forms a significant part of the Green Deal Assessment, so there is cross subsidisation occurring of an existing regulatory requirement.

⁵⁹ We have conservatively assumed that all tenants taking out a loan to cover the installation of energy efficiency measures do so by taking out Green Deal Credit. In reality, landlords may use other financing arrangements, which may have lower borrowing costs than the Green Deal.

⁶⁰ Source: Green Deal Assessment Survey, September 2012.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/271608/Waves_1_2_and_3_plus_wave_1_follow_up_-_full_report__P23_-_24_-_FINAL.pdf

⁶¹ These are the same cost assumptions as used within the ECO/ Green Deal Final IA

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42984/5533-final-stage-impact-assessment-for-the-green-deal-a.pdf. There is also a one off set up charge of £63. The costs of this set up charge are assumed to be repaid through Green Deal loan repayments, with the charge spread across the lifetime of the loan.

81. **Hidden costs**⁶². These are primarily composed of the time taken by owners or tenants to research measures, arrange for installation, prepare the property for installation and any oversight, clean-up or redecoration costs associated with the installation. These costs are expected to be small in the majority of cases. The minimal time spent researching and organising installations and the potential costs of disruption caused by the installation of some measures are the main hidden costs borne by landlords⁶³. For modelling purposes, we assume that landlords incur 75% of hidden costs, and that the tenant incurs the rest.
82. We have assumed that hidden costs represent 10% of the cost of installation. This is generally lower than the hidden costs of measures assumed in the Green Deal/ECO final Impact Assessment⁶⁴. The rationale for assuming lower hidden costs is as follows.
- i. The Green Deal/ ECO final impact assessment was modelled using the Green Deal Household model⁶⁵, which estimates the uptake of the major measures (solid wall, cavity wall and loft insulation). The modelling presented in this IA, however, also includes the uptake of smaller, cheaper measures, such as low energy lighting and draught proofing. The hidden costs associated with such measures are expected to be very small.
 - ii. Energy efficiency improvements are expected, for the most part, to be carried out during void periods, which will minimise the disruption to the tenant and landlord⁶⁶, as well as potentially align the works with a natural point for undertaking property maintenance and improvements. Both of which will reduce the ‘disruption cost’ component of the hidden costs. Furthermore, making energy efficiency improvements during void periods is likely to remove some components that are classified as hidden costs entirely (for example, the costs associated with liaising with the tenant over making the energy efficiency improvements).
83. **Enforcement and compliance costs:** These are the costs to local authorities of enforcing the Regulations, and the cost borne by landlords by ensuring and demonstrating that they comply with them. These are comprised of the following:
- i. Administrative and policing costs for local authorities in monitoring compliance. These are expected to be small, as local authorities will already police and monitor the requirement to have an EPC. There will therefore only be small additional costs associated with monitoring that these landlords have also complied with the Regulations (for example, demonstrating evidence that the works have been carried out, or presenting a valid exemption certificate);

⁶² See the Ecofys (2009) “The hidden costs and benefits of domestic energy efficiency and carbon saving measures” report for further details. These costs may be overestimates as the existence of Green Deal accredited assessors and installers may reduce research costs, and combining measures with other refurbishment may introduce economies of scale.

⁶³ In some instances, such as with solid wall insulation, there may also be costs associated with gaining planning permission. This is expected to occur in only a small number of cases, at a cost between £50 – 170 per property
http://www.planningportal.gov.uk/uploads/english_fees-feb_2010.pdf

⁶⁴ The hidden costs presented in the ECO impact assessments are based on an Ecofys report (Ecofys (2009) “The hidden costs and benefits of domestic energy efficiency and carbon saving measures”). We assume that the components that make up the hidden costs are the same as outlined in this report and the ECO IA, with the only the size of some of the hidden cost components assumed to be lower (for the reasons set out above). This is in line with the report itself, which notes that many components of the hidden costs should be lower during void periods. We welcome views on hidden costs, as well as our assumption that hidden costs will be lower than those assumed in previous ECO IAs.

⁶⁵ Details of the Green Deal Household model are outlined in the 2012 ECO Green Deal ‘Final’ IA https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42984/5533-final-stage-impact-assessment-for-the-green-deal-a.pdf. Subsequent amendments to the model were outlined in the ECO analysis of impacts https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/286926/The_Future_of_the_Energy_Company_Obligation_Assessment_of_Impacts.pdf

⁶⁶ The average void period is three weeks, according to the Association of Letting Agents <http://www.arla.co.uk/media/466322/ARLA-PRS-Report-Q4-13.pdf>. However, for major works, void periods may have to be extended to complete the works, though this is only expected to be the case in a small number of instances.

- ii. Landlords will face compliance costs in understanding the Regulations. It is expected that landlord guidance will be issued after the secondary legislation for the Regulations is laid. The cost to landlords is associated with the time they spend reading this guidance.

84. **Temporary exemptions.** If the recommended package of measures does not pass the Green Deal Golden Rule, they will be granted a temporary exemption from reaching the minimum standard. Similarly, if the tenant consent that a landlord must obtain to do improvements is denied, a temporary exemption will apply. Acquiring a valid temporary exemption may impose costs on landlords. No estimate has been made in this IA of exemption costs. This is due to the range of permutations to the scope and application of temporary exemptions being explored in the consultation, and due to lack of data. Estimates will be attempted for the final IA making use of information from consultation responses. However, we expect that this cost will be small relative to the total costs and benefits of the overall policy.
85. Further details on compliance and enforcement costs are provided in Annex A.
86. There may be a small cost to letting agents in understanding the Regulations. However, it has not been possible to monetise this cost for the consultation
87. **Unreasonable refusal.** From April 2016, domestic PRS landlords cannot unreasonably refuse consent to a tenant's request to undertake energy efficiency improvements, so long as this does not result in an upfront cost to the landlord. Where a tenant makes such a request a landlord may incur costs in liaising with the tenant over the request, and, where the request is refused, costs of demonstrating that the works have not been unreasonably refused. The landlord and tenant may also face tribunal costs in the event of a dispute. As with temporary exemptions, no estimate has been made in this IA of exemption costs due to challenges in quantifying the impact and a lack of data. Nonetheless, we expect that this cost will be small relative to the costs and benefits of the overall policy (see section 8.6 for more detail).
88. There is uncertainty around all of these figures. Changes in the costs of installations or the interest rates charged for Green Deal financing could have a large impact on policy costs, although the cost-effectiveness criterion will limit the downside risk to its value for money. Estimates of 'hidden' and other associated costs are not as strongly evidenced as the larger cost categories. As these costs are comparatively small, changes to them should not significantly affect the overall assessment. The consultation seeks evidence on expected levels of non-financial costs relating to facilitation of improvements works required under the Regulations.

7.2 Benefits

89. Benefits accrue to landlords, tenants and wider society. This section lists the benefits that are monetised and included in the Cost Benefit Analysis (CBA) and/or the distributional analysis.

7.2.1 Benefits in CBA

90. **Energy Savings.** Installation of energy efficiency measures reduces the resources needed to meet demand. This has been monetised in accordance with Green Book guidance^{67,68}. Energy savings mean fewer resources are required to meet energy demand, which is a benefit to society and therefore captured in CBA tables.
91. **Air Quality Improvements and Carbon Savings.** Improvements in energy efficiency reduce the amount of energy that needs to be used. This reduction improves air quality and reduces carbon emissions⁶⁹. Reductions in carbon emissions help meet the country's Carbon Budgets, while improvements in air quality reduce adverse health impacts (including mortality and morbidity), immediate environmental impacts (such as acidification), and long-term environmental impacts (including climate change). The benefits have been calculated in accordance with Green Book supplementary guidance⁷⁰.
92. **Comfort taking:** Energy efficiency measures reduce the amount of fuel required to deliver a given level of energy service, meaning that some households will heat their homes to a higher temperature, for a longer period, or heat more rooms in their homes. The benefits of comfort taking are assumed to occur in the domestic sector only⁷¹.

7.2.2 Benefits assessed in distributional analysis

93. Energy savings as a result of installing energy efficiency measures under the Regulations are expected to benefit tenants by lowering their fuel bills and/or improving comfort levels. However, the Regulations could also potentially benefit landlords, as lower fuel bills could, in theory, allow landlords to charge marginally higher rents (depending on local market conditions), and may increase the property's market value. Whether a landlord or tenant captures the benefit is a distributional consideration, so this benefit has not been included in the main CBA tables. However, the distributional assessment of energy savings are used to assess the impact on business (see Sections 10.1 and 11.1).
94. **Bill Savings:** Improving a property's energy efficiency will mean that less energy is required to achieve a given level of energy service demand. Tenants will take some of this benefit through bill savings (calculated using the retail price) and some through comfort taking discussed above. Furthermore some potential bill savings could fund Green Deal credit repayments (as discussed under costs).
95. **Increases in Property Values:** Increasing a property's energy efficiency could increase its market value. In a market exhibiting the features of perfect competition, the market value of a property (its price) will reflect the cost of supplying the marginal property. As the tenant pays the vast majority of the costs of this measure, the marginal cost to landlords will not materially change. However, if the cost of occupying more energy efficient properties is lower (which should be the case even with Green Deal Plan payments offsetting some of the energy bill savings) - there is likely to be a shift in demand towards these properties. This demand shift would increase the value of more energy efficient properties at the expense of the less efficient (see below for a quantification of this potential benefit in capital values), as the market becomes

⁶⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/254083/2013_main_appraisal_guidance.pdf

⁶⁸ The energy savings delivered by a measure are assumed to stay constant over the lifetime of the measure, and then fall to zero when measures expire.

⁶⁹ Carbon savings are divided into those that are traded (i.e. emissions covered by the EU Emissions Trading System) and non-traded (ie, emissions outside of the Emission Trading System). More details System can be found here: http://ec.europa.eu/clima/policies/ets/index_en.htm

⁷⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/254083/2013_main_appraisal_guidance.pdf.

⁷¹ Comfort taking is assumed to be 15% of SAP energy savings, after adjusting for in use factors (that is, the difference between theoretical energy savings delivered from energy efficiency measures and those expected once the measures are installed into a household). Further details on in use factors can be found here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48407/5505-how-the-green-deal-will-reflect-the-insitu-perfor.pdf

differentiated according to properties' energy occupancy cost. In the rental market, this could result in landlords being able to charge higher rent levels⁷².

96. We have quantified the benefit associated with an increase in property market value to domestic landlords using DECC's recently-published energy efficiency hedonic price study^{73,74}, which suggests that energy efficiency improvements increase the market value of buildings^{75,76}. The study presents the percentage increase in property value associated with moving up each EPC band. This percentage increase was monetised by assuming that the average of all dwelling house prices in England and Wales⁷⁷ had an EPC rating of a 'D', which is the average EPC rating across the PRS stock⁷⁸. The property value was then increased (based on the percentages presented in the study) for ratings 'A' to 'C' and decreased for properties rated 'E' to 'G'.

97. The improvement in market value was then reduced to account for the following:

- i. The hedonic pricing study does not differentiate between owner-occupied and private rented sectors - it applies to all properties bought and sold that met specific criteria (in other words, the study does not look at the benefits of making energy efficiency improvements specifically within the PRS). Therefore, while the landlord rents out the property, some of the bill savings are expected to accrue to tenants rather than landlords⁷⁹ as the market is unlikely to perfectly reflect the level of energy savings in the rent levels.
- ii. The study does not assume Green Deal Plans are attached to the property's bill. As Green Deal Plan repayments will reduce the net occupancy savings, properties sold with Green Deal Plan attached to their fuel bill are likely to have a lower price premium until the Plan has been fully repaid. General aversion to any credit that may be attached to a property at the point of sale may also reduce any possible increase in property value.

98. The difference in market value between the different EPC bands was then multiplied by the number of buildings seeing this improvement in their EPC due to the Regulations, giving the overall benefit to landlords of the policy. To calculate the time profile of these benefits, it was assumed that the property was sold seven years after the works were carried out⁸⁰.

99. International evidence⁸¹ suggests that an increase in property values, as a result of making energy efficiency improvements, might also be expected in the non-domestic PRS. The mechanism through which energy efficiency improvements could translate into possible increases in a building's value is the same as those in

⁷² The barriers outlined in Section 2 mean that the energy efficiency improvements are unlikely to be made in the absence of the Regulations, meaning these benefits are, in many cases, unlikely to be realised.

⁷³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207196/20130613_-_Hedonic_Pricing_study_-_DECC_template_2_.pdf

⁷⁴ The study has been peer reviewed by academics at Trinity College Dublin (publication forthcoming). They concluded that the study was "... a solid piece of research that goes a long way to answering the underlying question of whether energy efficiency is reflecting in housing market values in England", although there were also some methodological aspects highlighted in the review. DECC is planning to update the study, taking the peer review comments on board.

⁷⁵ A literature review of past studies is presented within the hedonic price study (see reference above).

⁷⁶ Note that the study does not investigate the relationship between spending on energy efficiency and it how translates into changes in the property's value (that is, it does not show whether £1 spent on energy efficiency improvements leads to more or less than a £1 increase in the property's market value).

⁷⁷ <http://www.ons.gov.uk/ons/rel/hpi/house-price-index/december-2013/stb-december-2013.html>. House prices were converted into 2013 prices using the average increase in the consumer price index over 2012.

⁷⁸ See Section 1 for more details.

⁷⁹ It may be possible for landlords to capture some of the bill savings by charging higher rents. However, there is no data on the impact of greater energy efficiency on rents, so it has not been possible to quantify the impact.

⁸⁰ The English Housing survey 2011-12 shows the average length of residence in the owner occupier sector is 13 years. Using this as a proxy for the length of time a landlord might own a PRS property, and assuming that the landlord was midway through the ownership period when the measure was installed, means the landlord would realise the benefits of the increase in property value around 7 years after the measures are installed.

⁸¹ These are discussed as part of the literature review within DECC's aforementioned energy efficiency hedonic price study.

the domestic PRS, as described above. We have not monetised the benefit of an increase in property value in the non-domestic PRS, however, as previous UK-based studies have not produced statistically significant increases in property values (although other international studies suggest such an increase may exist). In any case, both landlords and tenants are classified as businesses in the non-domestic PRS (see Section 11). As a result, capturing the benefits associated with both an increase in property value (which accrues to landlords) and fuel bill savings (which accrues to tenants) would lead to the double counting of business benefits. This is because both of these benefits are derived from the energy savings that result from making energy efficiency improvements to a property⁸².

100. **Other landlord benefits:** There are also a number of benefits (identified by National Landlords Association⁸³), which may result from increased uptake of energy efficiency measures that it has not been possible to monetise. These include

- i. Increased tenant satisfaction and reduced void periods;
- ii. Reduced long term property maintenance costs; and
- iii. Making properties easier to let (there are future EU requirements to display energy efficiency ratings, so higher energy efficiency ratings should make properties easier to let).

101. **Wider benefits.** There are also likely to be benefits associated with improved health (additional to the monetised comfort taking benefit) and productivity that it has not been possible to monetise. There could be benefits in the wider macro-economy associated with the productivity gains in more energy-efficient businesses and an indirect 'rebound effect' associated with increases in real incomes as a result of fuel bill saving. These benefits have not been monetised. One might expect that these benefits would be largest under Option 3 (as the benefits would be realised earliest) and smallest under Option 2 (where benefits are realised latest).

⁸² In the domestic sector, tenants are not classified as businesses, so the sole direct benefit is assumed to be the increase in property values (which accrues to landlords) – hence there is no risk of double counting of the energy savings.

⁸³ <http://nlauk.wordpress.com/2010/11/11/landlords-to-be-dealt-a-fair-hand/>

8. Impact Analysis

8.1 Costs and benefits

8.1.1 Domestic PRS

102. The PRS Regulations create two effects that lead to higher uptake of energy efficiency measures compared to the business as usual. The first is the higher volume of premises to which landlords and tenants consider undertaking investment to improve their EPC. Second, the safeguards within the policy (that there ought not to be net nor upfront costs to landlords, and energy efficiency improvements need only be made where the improvements meet the Green Deal's Golden Rule) will help ensure uptake to the most cost effective measures. Together, they are expected to drive up the level of capital investment beyond the level without the Regulations (presented in the Counterfactual section). Costs are largely incurred by tenants, who pay for the installation and finance costs (apart from in void periods between tenancies), but who are also the main beneficiaries from the energy savings⁸⁴ and comfort benefits. Hidden costs and assessment costs are likely to be spread across landlords and tenants. Other benefits, such as air quality, carbon savings, lower NHS costs and larger EU allowance savings, are more evenly spread across society as a whole.

103. All else being equal, we would expect the costs and benefits, in net present value (NPV) terms, to be largest under Option 3 (the hard start) and smallest under Option 2 (the soft start), as the former Option generally requires landlords to act earliest, and the latter, the latest. Discounting therefore reduces the costs and benefits the most under Option 2 and the least under Option 3. Furthermore, the safeguards for tenants and landlords, mentioned above, alongside the cost effectiveness of making energy efficiency improvements in buildings more generally⁸⁶, mean we should expect the NPVs of the policy to be positive under all options.

104. There are, however, a number of factors, which we have been unable to quantify in this consultation IA that may impact the expected NPV ordering of the policy options. These include:

- i. There is currently no agreed methodology for including monetised health impacts of improved energy efficiency into overall NPV calculations, due primarily to the potential for double counting of benefits counting of comfort benefits⁸⁷, so we have not been able to fully capture the health benefits from making the energy efficiency improvements. However, we have used

⁸⁴ Tenants will benefit from energy savings, and these benefits are valued using DECC's retail price series. The prices in this series are higher than the price series used to derive societal energy savings, which are valued using DECC's long run variable costs of energy supply, as the latter prices strip out fixed costs and transfers. As a result, the energy savings presented in the table under-estimate the value of the benefits to tenants.

⁸⁵ The DEPP model assumes that 70% of ECO-qualifying measures will benefit from an ECO subsidy, but the carbon savings from these measures are captured by the ECO policy. The model takes the value of ECO's subsidy and applies it to the ECO-qualifying measures to estimate the level of post-ECO subsidy uptake. The final uptake levels, with or without ECO subsidy, are independent of the take-up levels projected in the ECO consultation's analytical annex.

⁸⁶ The cost effectiveness of energy efficiency is discussed in more detail in DECC's Energy Efficiency Strategy https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65602/6927-energy-efficiency-strategy--the-energy-efficiency.pdf

⁸⁷ Comfort taking is often interpreted as a 'forgone bill saving' as a result of homeowners choosing to make their home warmer rather than taking the full benefit of measures in the form of bill reductions. In terms of measuring the change in societal welfare, what this is actually measures is how much value a household puts on being warmer rather than taking the full bill savings from installing energy efficiency measures. This extra warmth has a market value (i.e. the price of the energy they're 'not saving' by being warmer instead). However, it is not clear whether homeowners' decision to increase the warmth of their home, rather than just take the full bill savings, is valuing the immediate improvement in thermal comfort, or whether they perceive some future health benefit from this extra warmth. It is therefore uncertain the extent to which the value of the health benefits from improved energy efficiency are captured in the Net Present Value calculations in this Impact Assessment. If households do not fully consider and acknowledge the full health benefits of being warmer, which is highly likely given the informational requirements involved, then we are potentially underestimating the health benefits in the cost benefit analysis.

DECC's Health Impacts of Domestic Energy Efficiency Measures (HIDEEM) model to give a broad indication of the likely magnitude of this benefit (see Section 8.5, below). Figure 9 in Section 2.2.2 also sets out the Present Value of Health Benefits for typical energy efficiency improvements. This shows that installing a single energy efficiency measure can drive health improvements between £200 and £1,000 in present value terms over its lifetime. Given the scale of estimated uptake of measures under the options in this Impact Assessment, it is clear that there are potential health benefits worth several millions of pounds as a result of these proposals.

- ii. The increase in the value of traded carbon disproportionately benefits delayed investment (which occurs under Option 2)⁸⁸. Under this Option, the rising price of traded carbon more than offsets the fact that these energy savings are realised later, which skews the benefits towards Option 2 and away from Option 3. This is the consequence of the cost/benefit accounting methodology, which values the benefit of saving traded carbon in terms of the cost to abate it, which is expected to rise sharply over time; the impact of carbon emissions on society is much more stable, so the benefit of reducing emissions will not change so significantly over time. Taking a societal cost approach would remove this skew in benefits.
- iii. This IA also counts as additional only measures installed to deliver the initial up-lift from F and G-ratings to E or higher, not their re-installation⁸⁹. As such, when the measures installed come to the end of their life and are replaced, they continue to deliver carbon savings (and costs) but these savings are excluded from the costs and benefits above. Consequentially, Option 1 and Option 3 under-estimate their net present value compared to Option 2, everything else being equal.
- iv. Option 3 is likely to have higher hidden costs as improvements would need to be proposed and undertaken where there is a sitting tenant. As a result, Option 3's costs are likely to be underestimated, while for Options 1 and 2 they may be over-estimated⁹⁰.
- v. The modelling uses the same assumptions about tenancy turnover for each option. However under Option 2 it is possible that without a backstop landlords may strategically manage their tenancies, agreeing longer term tenancies just before 2018 and renewing the tenancy to the same occupant to delay being impacted by the Regulations. The potential for this behaviour is difficult to evidence and assess and has therefore not been captured in the modelling. However, such behaviour, were it to occur, would be expected to delay the impact of the regulations under Option 2.
- vi. Option 3 may result in more landlords required to undertake the energy efficiency improvements while there is a sitting tenant (rather than during a void period, which is more likely to occur under Options 1 and 2). As the tenant has the right to refuse consent for the energy efficiency improvements to be made, this may reduce uptake under Option 3 (at least when the Regulations first come into force in 2018). The degree to which consent may be denied by sitting tenants is unknown, as it may depend on the types of works installed (and their

⁸⁸ The increase in the value of traded carbon reflects the disjoint between the current value of EU Allowances in the EU ETS and the estimated price required in future to meet the UK's long run climate change goals.

⁸⁹ This is a simplifying assumption. Modelling the re-installation of measures when they come to the end of their lifetime is extremely challenging from a modelling perspective, so we have not done so on the grounds of proportionality. We will look to address this issue as part of the final IA.

⁹⁰ There is no evidence on how hidden costs vary depending on whether works are carried out during a void period compared to when the tenant is in situ. Given that the degree to which hidden costs vary will also depend on the types of measures installed (for example the variation in hidden costs associated with fitting draught proofing is likely to be a lot smaller than fitting internal solid wall insulation), and the need additionally model whether or not the property is void while the works are carried out, we have not varied the hidden costs between policy options on the grounds of proportionality. However, we intend to revisit this issue as part of the final IA.

disruption to the tenant), whether and how much Green Deal charges are to be added and the particular relationship between landlord and tenant in any given situation.

- vii. Where a property is unable to reach an E rating they may be eligible for a temporary exemption (for example landlords have undertaken all improvements within the Golden Rule taking into account funding support). These exemptions will expire after a reasonable period (the consultation seeks views on setting this at five years in most cases). Therefore landlords will need to try again at a later date to reach an 'E' or undertake improvements that may be fundable without upfront to get them as close to 'E' as possible. This is likely to mean that more properties will undertake improvements under Option 1 and Option 3, as properties are required to act earlier, and where an exemption applies, re-attempt to meet the standard earlier, than would be the case under Option 2.

105. These and other modelling limitations, which are outlined in Annexes 'E' and 'F', will be revisited in the final IA. They are likely to mean that the benefits reported below will be understated. This underreporting of benefits will be largest under Option 3, followed by Option 1, then Option 2. Furthermore costs in all of the options are likely to be overstated as we have assumed that the works are financed using Green Deal finance (as opposed to other routes including savings or mortgage extension). The overstatement of financing cost may be compounded under Option 3 by potentially higher hidden costs (as the energy efficiency improvements are more likely to be made while the tenant is in situ under this Option, which would lead to disruption for the tenant and, for the landlord because there is the need to liaise with the tenant over carrying out the energy efficiency improvements).

106. The monetised costs and benefits of the Regulations relative to the counterfactual in the domestic PRS are presented in Table 3. The impacts presented below exclude the costs and benefits relating to ECO, which is captured as part of the counterfactual, and have therefore been excluded here to avoid double counting⁹¹.

107. Table 3 shows that all options have a positive NPV over the appraisal period, with Option 2 having the highest NPV, and Option 3 the lowest. Total costs are highest under Option 3, as the energy efficiency improvements are made earlier, and total costs are lowest under Option 2, as the soft start means that some works are carried out many years later than in the other options.

108. Across all options, installation costs and Green Deal credit repayments are the largest components of costs, accounting for around 90% of the total. Hidden costs are estimated to be around 10% of the capital cost in all three options⁹². With relatively little variation in installation costs between the options, there is also relatively little variation in hidden costs.

109. The table also shows that energy savings⁹³ are the largest benefit of the Regulations, comprising over 80% of the total monetised benefit across the three options. Benefits are generally lowest under Option 2 and highest under Option 3, primarily due to the energy savings being delivered earlier under Option 3.

110. All but one of the benefits is largest under Option 3, as the benefits are realised earlier. The notable exception is the high value of traded carbon savings under Option 2, where a rising price of traded carbon more than offsets the fact that these energy savings are realised later. This means these benefits are highest under Option 2 and lowest under Option 3, and that the benefits do not vary as much as the costs when moving from Option 1 to Option 2.

⁹¹ Details of the ECO analysis can be found here: <https://www.gov.uk/government/consultations/the-future-of-the-energy-company-obligation>

⁹² This is lower than the 20% assumption contained within the ECO Green Deal Final IA. This reflects the fact that landlords are likely to undertake the energy efficiency improvements during void periods, and/ or coincide with refurbishment cycles. See Section 7 for more information.

⁹³ Further details can be found in in the DECC's Green Book Supplementary Guidance https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/254083/2013_main_appraisal_guidance.pdf. As these are energy savings to society, they are not directly comparable with other costs incurred by landlords or tenants presented in the CBA table.

111. A further benefit delivered by all the PRS policy options arises from the interaction with the Energy Company Obligation (ECO). As the PRS Regulations increase the number of households who wish to undertake energy efficiency measures, it expands the available pool of households available to install ECO-subsidised measures. This should reduce the overall cost of delivering ECO throughout the country as there will be a greater amount of potential available to obligated parties under ECO. Search costs to obligated energy suppliers should also be lower than without the PRS policy. No estimate has been made of the additional benefit provided by this effect at this stage, although the sensitivities provided in the recent ECO consultation's Assessment of Impacts demonstrate the possible impact of changing households' decision making frequency and search costs⁹⁴.

Table 3: Domestic CBA Table (2014-2070), £m, 2013 prices

	Policy Option 1 (Soft Start with a Regulatory Backstop)	Policy Option 2 (Soft Start without a Regulatory Backstop)	Policy Option 3 (Hard Start)
<i>Installation costs</i>	£231	£224	£239
<i>Hidden costs</i>	£23	£22	£24
<i>Assessment costs</i>	£11	£11	£12
<i>Green Deal Finance costs</i>	£144	£134	£151
<i>Understanding the Regulations</i>	£16	£16	£16
Total costs (£m)	£426	£407	£442
<i>Energy savings (variable element)</i>	£409	£402	£416
<i>Comfort benefits</i>	£109	£107	£112
<i>Air quality benefits</i>	£7	£7	£8
<i>Lifetime non-traded carbon savings</i>	£7	£7	£8
<i>Lifetime EU Allowance savings</i>	£81	£89	£74
Total benefits (£m)	£615	£613	£616
Net Present Value (£m)	£189	£206	£175
<i>Benefit to Cost Ratio</i>	1.5	1.5	1.5

Source: DECC Domestic EPC PRS Package Model

112. Incorporating more fully the costs as benefits currently excluded due to modelling limitations is expected to reduce the difference in the NPVs between these options, with the additional benefits expected to be largest under Option 3 and smallest under Option 2.

113. In presenting the costs and benefits of the Regulations to society in the table above, we have included Green Deal finance repayments as a cost to society. Supplementary guidance to the Green Book, "Valuing energy use and greenhouse gas emissions" advises that "the costs of private financing would generally be considered to be a real social cost. Where the method and terms of the financing do not differ between options, it would usually make sense to include these (socially discounted) costs in an NPV". Financing costs may affect private sector allocation decisions. This is the approach that has been adopted in this impact assessment and is consistent with previous related DECC IAs⁹⁵.

⁹⁴ Source: <https://www.gov.uk/government/consultations/the-future-of-the-energy-company-obligation>

⁹⁵ For example, the recently-published Energy Company Obligation Analysis of impacts https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/286926/The_Future_of_the_Energy_Company_Obligation_Assessment_of_Impacts.pdf

114. We have also outlined the impact of excluding financing costs in both the domestic and non-domestic PRS to illustrate the scale of their impact. Removing financing costs results in the NPVs for Options 1, 2 and 3 of: £333m, £340m, and £325m respectively, as shown in Table 4, below. The inclusion of private financing costs reduces the NPV and represents a prudent approach to avoid overestimating net benefits of the policy⁹⁶

Table 4: Domestic Cost/Benefit Analysis Table (2014-2070), Excluding Financing Costs, £m, (2013 prices)

	Policy Option 1 (Soft Start with a Regulatory Backstop)	Policy Option 2 (Soft Start without a Regulatory Backstop)	Policy Option 3 (Hard Start)
Total Costs (£m)	£282	£273	£291
Total benefits (£m)	£615	£613	£616
Net Present Value (£m)	£333	£340	£325
Benefit to Cost Ratio	2.2	2.2	2.1

Source: DECC Domestic EPC PRS Package Model

8.1.2 Non-domestic PRS

115. Table 5 shows the estimated costs and benefits for the non-domestic PRS as a result of the Regulations. It shows that all options have a positive NPV over the appraisal period. As in the domestic PRS, the largest costs are the installation and finance costs, while the largest benefits are energy savings. However, the absolute costs and benefits are larger in the non-domestic PRS. This is due to the higher energy saving potential per building within the non-domestic sector and because 70% of the domestic sector's costs and benefits are being attributed to ECO. The costs of carrying out the works, however, are also higher, generally due to the larger size of these buildings.

116. In contrast to the domestic sector, the highest NPV is under Option 3, while the lowest is under Option 2. This is largely driven by a greater ratio of energy savings to costs than in the domestic PRS, which has to disproportionately favourable impact on the NPV of Option 3, where the costs and benefits are realised earliest. Longer tenancy lengths in the non-domestic PRS also mean that the costs and benefits under Option 2 tend to be realised later than in the domestic PRS, leading to greater discounting of these benefits⁹⁷.

117. As with the domestic PRS costs and benefits, the installation and Green Deal credit repayments comprise the largest component of costs (nearly 90% of the total costs under all options). Energy savings are the largest component of the benefits, comprising around 80% of the total benefits.

118. Many of the modelling limitations outlined in the domestic section above also apply to the non-domestic PRS.

119. The unusual ordering of the traded carbon saving benefits in the table below can be explained by the interaction of a number of factors. The regulatory backstop under Option 1 (which comes into effect in 2023)

⁹⁶ Further consideration will be given to financing costs prior to the final IA.

⁹⁷ Related to this is the impact of bringing forward works that would have occurred in the absence of the Regulations. The Regulations not only compel landlords that would not have acted in the absence of the Regulations to improve the energy efficiency of their properties, they also have the potential to bring forward works that would have occurred in the absence of the Regulations, but at a later point in time. In other words, the Regulations bring forward works that occur under the counterfactual. The impact of bringing forward works will be largest with a hard start (under Option 3) and smallest under a soft start (under Option 2). In particular, with longer tenancy periods (on average), the energy efficiency improvements are spread out over a longer frame in the non-domestic PRS compared to the domestic PRS under Option 2. This means that more non-domestic landlords upgrade the energy efficiency of their properties before they are required to under the Regulations under Option 2, and therefore do not get captured in the CBA tables above.

brings forward more properties that would have acted in the absence of the Regulations (just at a later date) compared to Option 2⁹⁸. This is also true for 'hard start' to the Regulations under Option 3, however, because the improvements are made even earlier under Option 3 (in 2018, when the Regulations come into force), many of the measures have reached the end of their lifetime by the 2020s, when the carbon price is higher.

120. This result contrasts with the domestic sector because of: longer tenancy periods in the non-domestic PRS (which means that far fewer landlords, that would have acted in the absence of the Regulations but at a later date, are required to act early under a non-domestic 'soft start'); the later date for the Regulatory backstop in the non-domestic PRS (2023 compared to 2020 in the domestic PRS); and because measures installed generally have a shorter lifetime in the non-domestic PRS⁹⁹.

Table 5: Non-Domestic Cost/Benefit Analysis Table (2014-2070), £m, (2013 prices)

	Policy Option 1 (Soft Start with a Regulatory Backstop)	Policy Option 2 (Soft Start without a Regulatory Backstop)	Policy Option 3 (Hard Start)
<i>Installation costs</i>	£836	£765	£1,030
<i>Hidden costs</i>	£84	£76	£103
<i>Assessment costs</i>	£87	£76	£113
<i>Green Deal Finance costs</i>	£299	£274	£369
<i>Understanding the Regulations</i>	£13	£13	£13
Total costs (£m)	£1,319	£1,204	£1,627
<i>Energy savings (Variable element)</i>	£2,166	£1,997	£2,695
<i>Air quality benefits</i>	£24	£22	£29
<i>Lifetime non-traded carbon savings</i>	£143	£135	£181
<i>Lifetime EU Allowance savings</i>	£248	£230	£198
Total benefits (£m)	£2,581	£2,384	£3,103
Net Present Value (£m)	£1,262	£1,180	£1,475
<i>Benefit to Cost Ratio</i>	2.0	2.0	1.9

Source: DECC Non-Domestic PRS Model

121. The result of excluding financing costs is to increase the ratio of the benefits to cost, as well as increasing the net present values of the options. The NPVs of Options 1, 2 and 3 excluding finance costs are shown in Table 6 below.

⁹⁸ See Annex G for more detail.

⁹⁹ As mentioned in Section 8.1.1, measures are not re-installed once they reach the end of their lifetime.

Table 6: Non-Domestic Cost/Benefit Analysis Table (2014-2070), Excluding Financing Costs, £m, (2013 prices)

	Policy Option 1 (Soft Start with a Regulatory Backstop)	Policy Option 2 (Soft Start without a Regulatory Backstop)	Policy Option 3 (Hard Start)
Total Costs (£m)	£1,020	£930	£1,258
Total benefits (£m)	£2,581	£2,384	£3,103
Net Present Value (£m)	£1,561	£1,454	£1,845
Benefit to Cost Ratio	2.5	2.6	2.5

Source: DECC Non-Domestic PRS Model

8.1.3 Total Costs and Benefits

122. Combining the costs and benefits from the domestic and non-domestic sectors gives the total estimated monetised impact of the policy. Due to the larger NPV in the non-domestic PRS, Option 3 has the highest total NPV, while Option 2 has the lowest. The NPV of Option 1 lies between Options 2 and 3.

123. However, as outlined in Section 4.3.4 the preferred option offers more flexibility than Option 3 for landlords to comply with the Regulations. Further, unlike Option 2, the regulatory backstop under the preferred option ensures that tenants with long tenancy agreements should also receive the benefits from increasing the energy efficiency of the property, as well as mitigating the risks of potential strategic management of leases and lease lengths to avoid being required to act under the Regulations. Additionally, as outlined in Section 8.1.1, we do not believe that the modelling fully accounts for all of the costs and benefits, which may slightly bias the merit order of the NPVs, below.

Table 7 Aggregate Impact of the PRS Regulations, 2014 – 2070, £m, (2013 prices)

	Policy Option 1 (Soft Start with a Regulatory Backstop)	Policy Option 2 (Soft Start without a Regulatory Backstop)	Policy Option 3 (Hard Start)
<i>Installation costs</i>	£1,067	£989	£1,269
<i>Hidden costs</i>	£107	£98	£127
<i>Assessment costs</i>	£98	£87	£125
<i>Green Deal Finance costs</i>	£443	£408	£520
<i>Understanding the Regulations</i>	£29	£29	£29
Total costs (£m)	£1,744	£1,611	£2,070
<i>Energy savings (variable element)</i>	£2,575	£2,399	£3,111
<i>Comfort benefits</i>	£109	£107	£112
<i>Air quality benefits</i>	£31	£29	£37
<i>Lifetime non-traded carbon savings</i>	£150	£142	£189
<i>Lifetime EU Allowance savings</i>	£329	£319	£272
Total benefits (£m)	£3,194	£2,996	£3,721
Net Present Value (£m)	£1,450	£1,385	£1,651
Benefit to Cost Ratio	1.8	1.9	1.8

Source: DECC Non-Domestic PRS Model and DECC Domestic EPC PRS Package Model

124. The NPVs of Options 1, 2 and 3 excluding financing costs are £1,893m, £1,793m, and £2,171m, respectively, as shown in Table 7, below.

Table 7 Aggregate Impact of the PRS Regulations, 2014 – 2070, Excluding Finance Costs, £m, (2013 prices)

	Policy Option 1 (Soft Start with a Regulatory Backstop)	Policy Option 2 (Soft Start without a Regulatory Backstop)	Policy Option 3 (Hard Start)
Total Costs (£m)	£1,301	£1,203	£1,550
Total benefits (£m)	£3,194	£2,996	£3,721
Net Present Value (£m)	£1,893	£1,793	£2,171
Benefit to Cost Ratio	2.5	2.5	2.4

Source: DECC Non-Domestic PRS Model and DECC Domestic EPC PRS Package Model

8.2 Reduction in ‘F’ and ‘G’ Rated Building Stock

8.2.1 Domestic Sector

125. The table below shows the percentage of the domestic PRS stock (less exclusions) that reach an ‘E’, as well as those that make some energy efficiency improvement (although did not reach E), and those that made no improvement to their energy efficiency under the preferred option. It shows that around 44% of domestic F and G rated PRS properties are estimated to improve their EPC rating to E by the end of the appraisal period; a further 12% are likely to see some improvement in their EPC rating. Just over a 40% of properties, however, are expected to make no improvement, because the measures recommended do not meet the Golden Rule. These are mostly ‘F’ rated properties, with less than 10% of G rated properties unable to make an improvement to their energy efficiency rating.

126. In reality, our estimates may understate the number of properties that increase their energy efficiency, as real reductions in the cost of energy efficiency measures, technological improvements in energy efficiency measures and increasing competition may allow more improvements to meet the Golden Rule. Our modelling simplifications may also prevent some properties from meeting the Golden Rule¹⁰⁰. Furthermore we assume that no landlord will voluntarily meet any shortfall in Green Deal credit to make improvements meet the Golden Rule. However, in reality, some landlords may choose to do this, especially if the shortfall is small and the property can reach an ‘E’, meaning that they will not need to seek a temporary exemption.

Table 8 – Improvement in Domestic PRS EPC ratings

End Position	Percentage
<i>Meets ‘E’ or above</i>	44%
<i>Made improvements (but do not reach ‘E’)</i>	12%
<i>No improvements made</i>	44%
Total	100%

Source: DECC Domestic EPC PRS Package Model

¹⁰⁰ See Annexes C, E and F for more information.

8.2.2 Non-Domestic Sector

127. The table below shows the improvement to the PRS 'F'- and 'G'- rated non-domestic building stock under the preferred option. It shows that 53% of the stock make it to an EPC rating of an 'E', but that around 40% make no improvement. As with the domestic EPC improvements, these estimates may understate the actual number of properties that can make improvements over the appraisal period (for similar reasons to those listed above).

128. That around 40% of properties make no improvement is likely to be an under estimate, for many of the same reasons stated in the domestic sector above.

Table 9 – Improvement in Non- Domestic PRS EPC ratings

End Position	Percentage
<i>Meets 'E' or Above</i>	53%
<i>Make Some Improvement (but do not reach 'E')</i>	7%
<i>No Change In EPC Rating</i>	40%
Total	100%

Source: DECC Non-Domestic PRS Model

8.3 Uptake of Measures in the PRS

8.3.1 Energy efficiency Uptake

129. Tables 10 and 11, below, show the uptake of measures in the PRS under the preferred option (Option 1). The uptake of measures is split between households receiving ECO support, and those measures delivered exclusively through the Green Deal. We have assumed that 70% of households have the option of receiving an ECO subsidy when they choose to install an ECO-qualifying measure. These 70% of households will be excluded from the cost benefit analysis and from the uptake table below. This proportion has been used because: not all landlords will be aware of ECO funding sources; and ECO funding for some measures, such as SWI, could be limited if there is a low minimum target, such as in the proposed under ECO. Different proportions receiving ECO are tested in the Sensitivity Analysis section.

Table 10 Domestic Measure Uptake (excluding ECO) under Policy Option 1

Measure	Volume
<i>Draught proofing</i>	47,625
<i>Low energy lights¹⁰¹</i>	43,096
<i>Loft insulation</i>	24,496
<i>Hot water cylinder insulation</i>	23,711
<i>Cylinder thermostat</i>	22,137
<i>Heating controls</i>	20,790
<i>Double/secondary glazing</i>	12,232
<i>Cavity wall insulation</i>	12,176
<i>New/replacement storage heaters</i>	9,005
<i>Replacement warm air unit</i>	5,821
<i>Upgrade to condensing gas boiler</i>	95
Total number of measures installed	221,184

Source: DECC Domestic EPC PRS Package Model

Table 11 Non Domestic Measure Uptake under Policy Option 1

Measure	Volume
<i>Condensing Boiler</i>	109,126
<i>HF (high frequency) ballasts for fluorescent tubes</i>	67,605
<i>Air source heat pump</i>	34,010
<i>Replacing T8 lamps with retrofit T5 conversion kit</i>	31,637
<i>Replacing tungsten GLS lamps with CFLs</i>	28,094
<i>Cavity wall insulation.</i>	28,011
<i>Secondary glazing</i>	11,965
<i>Other</i>	20,736
Total number of measures installed	331,184

Source: DECC Non-Domestic PRS Model

130. Uptake of measures in the **domestic PRS** is dominated by relatively cheap measures: draught proofing accounts for around 20% of all measures delivered. There is also a large uptake of low energy light bulbs

¹⁰¹ Light bulbs do not currently qualify as a Green Deal measure. They are included in the analysis because they are frequently recommended in EPCs as an improvement measure that could make the difference between an F and an E rating. It is highly likely that a landlord, when faced with the opportunity to upgrade the property's lighting in order to improve its EPC, will make the investment, given they are normally responsible for providing adequate lighting for the property. The inclusion within the Green Deal plan is a modelling simplification that does not change the merit order of the options under consideration.

(19% of the total), and loft insulation (11%). A lower level of uptake for expensive measures, with, expensive solid wall insulation (only installed if it receives an ECO subsidy) only taken up by around 4% of PRS households.

131. The most common energy efficiency improvement in the **non-domestic PRS** is estimated to be replacement boilers, accounting for around a third of all non-domestic energy efficiency improvements, followed by lighting, cavity wall insulation and heat pumps. Note that there are no ECO subsidies in the non-domestic PRS.

132. The volume of measures installed in the non-domestic PRS is larger than the domestic PRS. The cost of the installation per property is also expected to be larger in the non-domestic PRS. Therefore, the cost of installing these measures is expected to be larger.

133. The uptake of measures in the non-domestic PRS under the alternative policy options is presented in Annex G. The mix of measures installed through the different policy options do not differ significantly, the main difference between the alternatives is the rate at which the measures are installed; their merit order is assumed to remain the same between the options.

8.4 Carbon Savings

134. Table 12 below shows the traded carbon savings from reduced electricity consumption and non-traded carbon savings from reduced consumption of gas and other fuels attributed to the Regulations under the preferred option (Option 1)¹⁰². The tables show additional carbon savings only; savings from all ECO-subsidised measures are excluded because their savings are counted under the ECO policy.

135. Over 75% of the carbon savings are within the traded sector. In the domestic PRS, this is due to the high prevalence of F and G rated homes using electricity for space and water heating. As electricity is more costly than gas, an electrically heated home is more likely to meet the Golden Rule from installing energy efficiency measures compared to a gas-heated home (everything else being equal). The DEPP model estimates, therefore, that uptake is more likely in electrically heated homes.

136. In the non-domestic PRS, the high prevalence of electric heating for space and water amongst F and G-rated premises, coupled with more cost-effective electricity-saving measures being available, explains the high traded carbon savings compared to the non-traded savings.

137. Further, for both the domestic and non-domestic PRS, a low amount of additionality is assumed for replacing boilers with more efficient varieties, given the impact of other Regulations to improve the efficiency of new boilers. The net impact of these PRS regulations is to bring forward carbon and energy savings by 1.4 years. Savings beyond that point are not considered to be additional.

Table 12 Domestic and Non-Domestic Carbon Savings by Carbon Budget Period – Option 1

MtCo₂		CB 2 (2013-17)	CB 3 (2018-22)	CB 4 (2023 – 2027)	Total (2013-2070)
<i>Domestic</i>	Traded	0.08	0.89	0.98	2.89
	Non-Traded	0.00	0.05	0.04	0.15
<i>Non-Domestic</i>	Traded	0.22	1.72	2.97	8.16
	Non-Traded	0.08	0.66	0.94	2.78

Source: DECC Domestic EPC PRS Package Model

¹⁰² An updated assessment of the impact of the policies on carbon emissions will be published in the 2014 Updated Energy Emission Projections (UEP). The UEP estimated impacts could differ from the ones presented here because of potential differences in final energy use and emission factors assumptions underpinning the forthcoming UEP projections.

8.5 Health Impacts

1. As outlined in section 2.2.2, making energy efficiency improvements to the least energy efficient properties may improve the health of the tenants. This includes a reduction in the risk of cardiovascular and respiratory diseases. We have monetised the health benefits associated with improving the EPC rating of the least energy efficient domestic PRS properties, using DECC's Health Impacts of Domestic Energy Efficiency Measures (HIDEEM) model (more details can be found in Exhibit 1, below).
2. Table 11 presents the results, based on the uptake of measures under the preferred policy option. Overall, the health benefits of the PRS Regulations are estimated to be around £25 million, with the largest benefits resulting from the installation of cavity and loft insulation (these are estimated to lead to monetised benefits of around £10m each).
3. As can be seen from the table below, it has not been possible to monetise the benefits associated with the estimated uptake for some of the smaller measures (such as draught proofing and heating controls), due to limited data on the health benefits associated with these measure types. As these additional measures will increase the energy efficiency of the household and thus enable warmer homes and their associated health benefits to be realised, aggregate health impacts presented in the table below are likely to be understated.
4. The monetised benefits shown below have not been included in the IA's main CBA tables. This is because there is no agreed methodology by which to incorporate health impacts into NPV calculation as of yet. However the monetised health benefits shown below have been included here to give an indication of the relative size of this benefit.

Table 13: Monetised Health Benefits from the PRS Regulations

Measures Delivered	Total Measures	QALY	Present Value of QALY / Measure (£)
Draught proofing	47,625	N/A	N/A
Low energy lights	43,096	N/A	N/A
Hot water cylinder insulation	23,711	N/A	N/A
Cylinder thermostat	22,137	N/A	N/A
Heating controls	20,790	N/A	N/A
New/replacement storage heaters	9,005	N/A	N/A
Replacement warm air unit	5,821	N/A	N/A
Cavity wall insulation	12,176	483	10,300,000
Loft insulation	24,496	468	10,200,000
Double/secondary glazing	12,232	208	5,000,000
Upgrade to condensing gas boiler	95	1	20,000
Totals	221,184	1160	25,520,000

Source: DECC HIDEEM Model

Exhibit 1 Health Impacts of Domestic Energy Efficiency Measures (HIDEEM)

We have been working with a team of leading experts from University College London and London School of Hygiene and Tropical Medicine to develop a model to estimate the change in occupants' health from the installation of energy efficiency measures (resulting from changes in the indoor temperature and pollutant exposure). The model that was developed is the HIDEEM model.

HIDEEM uses the EHS as a basis for the analysis. The model is built from a number of inter-related modules covering a building's permeability properties and individual health conditions. Pollutants included in the model that impact on health are: particulate matter, tobacco smoke, radon gas and mould growth. The health conditions linked to these pollutants include heart and circulatory diseases, cancers and strokes, as well as respiratory illness and common mental disorders. HIDEEM uses the Quality Adjusted Life Year (QALY) method to monetise these health impacts. This involves placing a value on the change in a person's health over time.

More details on HIDEEM can be found within the Fuel Poverty Strategy Analytical Annex

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211137/fuel_poverty_strategic_framework_analytical_annex.pdf

8.6 Impact of the Tenants' Rights

Tenants' Rights

138. We have not quantified the impact of the tenants' rights component of the Regulations. The tenants' rights component, which starts from April 2016, states that domestic landlords cannot unreasonably refuse tenant's requests to consent to energy efficiency improvements. Tenants would be able to request consent to improvements that can be funded without upfront cost to landlords.

139. This component of the Regulations is difficult to assess, but is expected to have a small impact relative to the minimum standard regulations. As the Department's research for the Green Deal showed¹⁰³, many tenants have limited attachment to their property and do not consider it their long term home, and would not ordinarily make requests for improvements. However through the availability of Green Deal finance, ECO and wider incentives announced as part of the Autumn Statement 2013¹⁰⁴ to be made available until 2017, tenants will have a range of new ways to pay for energy efficiency improvements.

140. Nevertheless, for short term tenancies, tenants may not have sufficient incentive to make a request as they may not expect to be in the property long enough to realise the benefits, and it may be unlikely that the bill savings under a Green Deal finance plan would repay any hidden costs of requesting consent for a measures from their landlord. If assumed that only longer term tenants (defined as those have been in residence for more than five years, i.e. 19% of all tenants)¹⁰⁵ - and 10% of these tenants make a request, around 1.9% of tenants would make a request at some point after the Regulations come into force. Assuming that half of these do not subsequently proceed with the works, either because their landlord was able to reasonably refuse the request, or the tenant decided not to proceed, then only around 1% of domestic tenants act under this component of the Regulations.

141. If we estimate that tenants in around 1% of the 4.2m households (less the 0.4m households in 'F'- and 'G'- rated buildings which are expected to be improved under the 2018 minimum standards) decide to ask for

¹⁰³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43019/3506-green-deal-consumer-research-prs.pdf

¹⁰⁴ <https://www.gov.uk/government/news/govt-action-to-help-hardworking-people-with-energy-bills>

¹⁰⁵ See Table 1.

energy efficiency improvements, then tenants in around 37,000 properties might request improvements under this component of the Regulations (at some point after they are introduced in April 2016). Given the likely small scale of the effects of these provisions we have not modelled the impact.

Potential Alternative Payback Criterion

142. For the minimum energy efficiency standards in the non-domestic PRS, some stakeholders suggested that an alternative means of demonstrating that reasonable levels of investment in energy efficiency improvements have been made to a property below an E rating outside the Green Deal's Golden Rule would be welcome. This is because a landlord may decide that they have no intention of using Green Deal finance, or even using a Green Deal Provider. Such landlords may have preferred suppliers, existing contracts with suppliers, and/or access to capital or other preferred sources of financing. The increased specialisation of property management for commercial property also makes potentially offering this option more viable than in the domestic sector.
143. To allow such landlords to demonstrate that they had undertaken reasonable steps in improving properties rated below an 'E', the Government is seeking views on whether to allow landlords to have an exemption from reaching the minimum standard where they have installed improvements that within a set period recoup in energy bill savings the cost of purchasing and installing the improvements. This would only be an alternative option, rather than a replacement to demonstrating compliance by undertaking those improvements fundable under the Green Deal's Golden Rule, and the Government would need to ensure that comparable levels of energy efficiency improvement are delivered (i.e. there is not a reduction in the level of improvements delivered under the alternative option).
144. The PRS consultation seeks views on whether to offer this alternative, and if so asks for evidence on what an appropriate payback period might be and how the process could work. Given that the policy framework for the payback rule is still largely to be determined, and the added constraint that Government will only accept a payback mechanism that delivers similar levels of energy savings, we have not quantified its impact in this IA.
145. Should this alternative be offered, the final Impact Assessment will evaluate its impact.

9. Sensitivity analysis

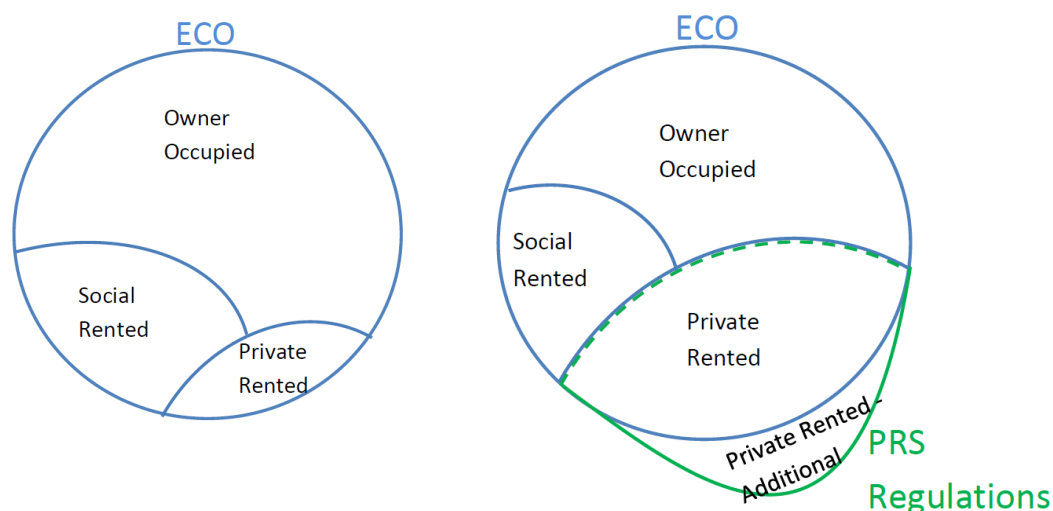
9.1 Domestic Sensitivity Analysis

146. The costs and benefits of the PRS Regulations to landlords, tenants and wider society will in part depend on factors independent of the policy. Sensitivity analysis has been undertaken on key uncertainties that could have an impact on the costs and benefits of the policy. These are outlined below and are all conducted around the preferred option (Option 1).

Higher and Lower ECO Coverage

147. As ECO subsidy is delivered via energy companies, their contractors, or independent Green Deal providers, it is likely that not all ECO eligible PRS households undertaking energy efficiency measures will be offered ECO subsidy. In the case of it coinciding with other improvement work, for instance, the preferred installer may not have a route to sell ECO points. Therefore, the proportion of PRS households that would have access to ECO funding post April 2018 (once the Regulations come into force) is not known. An assumed 'ECO coverage rate' of 70% for the domestic PRS modelling is used in the central scenario, implying that 70% of the domestic PRS housing stock has access to ECO subsidy aid, allowing them to carry out the works prompted by PRS Regulations.

148. The figures below show the interaction of PRS regulations with ECO. The solid and dashed green lines show the coverage of the PRS regulations, while the blue lines show the coverage of households receiving ECO. Reading the figures below from left to right shows that a change in uptake of ECO-qualifying energy efficiency measures resulting from the Regulations increases take-up of ECO, but displaces other sectors' households. As a result, this IA only considers additionality from the regulations in the area labelled 'Private Rented – Additional'. The expanded area of the circle diagrammatically shows the impact of lowered ECO cost enabling a greater number of installations



149. We have conducted sensitivities around this uncertain parameter by increasing and reducing the ECO coverage rate by 20 percentage points for all ECO-qualifying measures, to determine its impact.

150. The impact is to lower and raise the amount of capital spend on energy efficiency measures attributable to the PRS Regulations in the domestic sector by around 10% under the high and low ECO coverage scenarios, respectively. Savings are lower under the higher coverage because the additional measures captured by ECO are not considered additional for the purposes of this IA, as their benefits are accounted for under the

ECO policy. In contrast, more of the savings are considered additional under the low ECO coverage scenario. The change in energy savings delivered under the sensitivities change by a higher proportion than the installation costs, and are around 8% lower and higher than the central scenario under the high and low coverage scenarios, respectively (as shown in Table 15, below).

Higher and Lower Fuel Prices

151. The uptake of a package of energy efficiency measures depends on meeting the Golden Rule, which is based, in part, on the estimated bill savings delivered from the measure(s). These savings depend, in turn, on current and future energy prices. The current DEPP model, however, is limited in that it uses the 2018 energy prices for the Golden Rule calculation¹⁰⁶, which is used to determine uptake in all years. We have therefore increased and decreased the 2018 energy price to derive a broad estimate of the impact of higher and lower energy prices on the uptake of measures¹⁰⁷.
152. The results show a reduction in the installation costs under the high energy price scenario, but higher costs under low energy prices. This counter-intuitive result can be explained by the way in which energy prices interact with the EPC calculation and the ability of households to undertake packages of measures that meet the Golden Rule.
153. With higher energy prices, the fall in installation costs is partially explained by the way in which properties' EPC ratings are calculated: a higher fuel price makes it easier to attain an improved EPC rating because energy savings make a bigger impact on the cost of heating. Further, under high energy prices, more energy efficiency measures meet the Golden Rule, so more homes are able to improve their energy efficiency.
154. Under a low energy price scenario, households have more difficulty in achieving an EPC rating of E and must rely on bundling larger packages of measures together in order to meet the Golden Rule. This leads to fewer households making energy efficiency improvements, but those that do will take out larger packages than households under the central or high price scenarios.
155. Table 14 below illustrates the above scenarios in more detail. The first set of price scenarios shows those households who meet EPC band E and all who act in response to the Regulations, using a limited number of measures: loft insulation, cavity wall insulation and solid wall insulation. Under the high scenario, 35% of households meet E and 61% make at least some improvement. This compares with 16% and 22% who meet band E under the low and central price scenarios, respectively.
156. By expanding the possible measures that can be taken up beyond loft, cavity and solid wall insulation, more households are able to meet band E across the board. The biggest increase is in households in the low energy price scenario, where 43% are now able to make this jump in their rating. The proportion of households under the high price scenario able to meet band E rises less sharply; in the central scenario households rise to just above the level in the low price scenario. This pattern of movement suggests that the high price scenario enables households to identify more cost effective measures and spend less per household to meet the Regulations; the lower price scenarios require more energy savings to be delivered per household to meet E or the Golden Rule, and the wider packages of measures enable them to do this.
157. Table 14 reaffirms the proposition that the high price scenario households are able to identify more cost-effective measures, as it has the highest ratio of energy savings to installation costs; the low price scenario has the lower ratio.

¹⁰⁶ 2018 was chosen, as it is the year the minimum energy efficiency standards come into force, and therefore the year that the most landlords might look to undertake a Green Deal assessment. The retail price used for the Golden Rule calculation was based on the 2018 in year retail price of DECC's published price series. Details can be found here <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal> (see tables 4-8).

¹⁰⁷ The final IA will look to consider the trajectory of energy prices under DECC's central, high and low scenarios in order to calculate the Golden Rule for each individual year.

Table 14 – Number and percentage of properties Reaching E (by energy price scenario)

Measures available	Price scenario	Properties meeting E		All Properties improving	
		(000s)	(%)	(000s)	(%)
<i>Only loft, cavity wall, and solid wall insulation</i>	<i>High energy prices</i>	167	35	290	61
	<i>Central energy prices</i>	104	22	284	60
	<i>Low energy prices</i>	77	16	269	56
<i>All measures</i>	<i>High energy prices</i>	224	47	294	62
	<i>Central energy prices</i>	210	44	267	56
	<i>Low energy prices</i>	208	43	249	52

Source: DECC Domestic EPC PRS Package Model

Table 15 Domestic Sensitivities (2014-2070), £m, 2013 prices

	Policy Option 1 (Soft Start with a Regulatory Backstop)	High ECO Coverage (90%)	Low ECO Coverage (50%)	High Energy Prices	Low Energy Prices
Installation costs	£231	£223	£240	£159	£400
Hidden costs	£23	£22	£24	£16	£40
Assessment costs	£11	£4	£19	£12	£11
Finance costs	£144	£140	£149	£113	£223
Understanding the Regulations	£16	£16	£16	£16	£16
Total costs (£m)	£426	£405	£447	£316	£691
Energy savings (variable element)	£409	£376	£443	£388	£514
Comfort benefits	£109	£101	£118	£103	£140
Air quality benefits	£7	£7	£8	£7	£10
Lifetime non-traded carbon savings	£7	£6	£9	£10	£5
Lifetime EU Allowance savings	£81	£66	£96	£67	£129
Total benefits (£m)	£615	£555	£675	£574	£798
Net Present Value (£m)	£189	£150	£227	£258	£107

Source: DECC Domestic EPC PRS Package Model

9.2 Non-domestic: Sensitivity analysis

158. The non-domestic sensitivity analysis also explores the impact of key uncertainties to the analysis. The sensitivities performed here are broadly the same as in the domestic sector, although no ECO sensitivity is performed, as ECO subsidies is only available in the domestic sector.

Higher and Lower Fuel Prices

159. With higher energy prices, bill savings from the installation of energy efficiency measures are larger than under the preferred option. This means (all else equal) that more measures can be installed within the Golden Rule threshold, or that more properties can meet the Golden Rule. The opposite is the case under the low energy price scenario. This implies that costs linked to the installation of measures are lower than the preferred option under the low energy price scenario and higher than the preferred option under the high energy price scenario. These results differ from the domestic option because of the absence of ECO subsidies within the non-domestic PRS and because non-domestic EPC ratings do not depend on energy prices.

160. The modelling assumes that measures are installed in order of their cost effectiveness, which means that as more measures are installed, the marginal value of energy savings of each additional measure installed declines. With the fewest measures installed under the low energy price scenario, and the most installed under the high energy price scenario, the declining value of energy savings per measure installed means that the variation in the value of energy savings between the low energy price scenario and the preferred option is larger than between the preferred option and the high energy price scenario. The majority of the variation in the value of energy savings between sensitivities, however, is due to differences in the assumed market price for energy, rather than variation in the aggregate (KWh) energy savings.

161. Almost all of the extra energy savings delivered between the low energy price scenario and the preferred policy option are delivered to electrically heated properties, or involve the installation of measures that save electricity. This leads to a proportionately larger variation in traded carbon savings than non-traded carbon savings or air quality benefits. The extra energy savings between the preferred policy and the high energy price sensitivity, however, are a more even mixture of gas and electricity savings. As the energy savings are also smaller in absolute size, there is relatively little variation in the air quality benefits, and traded and non-traded carbon savings between the preferred option and high energy price scenario.

Table 16 Non Domestic Sensitivities, (2014-2070), £m, 2013 prices

	Policy option 1 (Soft Start with a Regulatory Backstop)	High Energy Prices	Low Energy Prices
<i>Installation costs</i>	£836	£900	£764
<i>Hidden costs</i>	£84	£90	£76
<i>Assessment costs</i>	£87	£87	£89
<i>Finance costs</i>	£299	£320	£274
<i>Understanding the Regulations</i>	£13	£13	£13
Total costs (£m)	£1,319	£1,409	£1,217
<i>Energy savings (Variable element)</i>	£2,166	£2,676	£1,701
<i>Air quality benefits</i>	£24	£25	£23
<i>Lifetime non-traded carbon savings</i>	£143	£176	£132
<i>Lifetime EU Allowance savings</i>	£248	£253	£245
Total benefits (£m)	£2,581	£3,130	£2,100
Net Present Value (£m)	£1,262	£1,721	£883

Source: DECC Non Domestic PRS Model

10. Landlord and PRS Market Impacts

162. This section discusses the impacts of the Regulations on landlords and the domestic PRS market.

10.1 Landlord Costs and Benefits

Domestic Sector

163. Section 7 outlines that the vast majority of costs fall on tenants (who are expected to receive the benefit from reduced fuel bills). However landlords incur the costs of reading and understanding the Regulations, paying for a Green Deal Assessment (where landlords are charged for the assessment), and the landlord portion of the hidden costs (assumed to be 75% of the total). In addition, landlords will have to pay any Green Deal repayments during (usually very short¹⁰⁸) void periods between tenancies. They also benefit from a potential increase in property prices (reflecting the increased energy efficiency of the building).

164. The exact distribution of costs between the landlord and tenant will vary from property to property. However, three illustrative examples of the potential costs and benefits of the Regulations to landlords are described below¹⁰⁹. They give an indication that landlords should generally benefit from the policy.

Table 17 – Examples Used for the Assessment of Costs and Benefits to Landlords

Example	Building Type	Starting EPC Score	Percentage of F and G rated PRS stock	Measures Installed (under the Green Deal)	Post Installation EPC Score	ECO or local authority grant?
1	-Small detached house -Electric heating and no gas connection. -Has solid walls, <125mm loft insulation	G (SAP score of 10)	2%	Loft insulation, hot water cylinder insulation, low energy lights, cylinder thermostat, new storage heaters and double glazing	E	No
2	-Large semi-detached house -Electric heating -Solid walls, no loft insulation required, single glazing.	G (starting SAP score of 12)	1%	Installs double glazing, new storage heaters, cylinder thermostat, low energy light bulbs, draught proofing, and hot water cylinder insulation.	E	No
3	-Small end of terrace -Electric heating	G (starting SAP score of 21)	0.5%	Loft and cavity wall insulation. Hot water cylinder insulation,	E	No

¹⁰⁸ As discussed in Section 4, the average void period is 3 weeks, according to the Association of Letting Agents <http://www.arla.co.uk/media/466322/ARLA-PRS-Report-Q4-13.pdf>

¹⁰⁹ While these examples represent just 3.5% of the domestic PRS stock, there are over 200 different property types within our domestic model, with no one group comprising a large percentage of the stock. These examples were chosen because they were considered broadly representative. See Annex E for more information on the domestic building stock contained within the domestic model.

-Hard to treat cavity walls.			draft proofing, and low energy lights		
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165. Table 18, below, shows the net impact of these examples, using a discount rate of 3.5% and assuming the works are carried out in 2018, and the property is sold in 2025¹¹⁰. In all three cases the increase in property value is expected to far outweigh the modest costs to landlords. This reflects the broader policy intent that the landlord does not generally bear the costs of the energy efficiency measures. Many of the costs borne by landlords will be passed onto tenants indirectly over time through marginally higher rents.

Table 18 – Net impact to individual landlords using the examples above

Example Property:	1	2	3
<u>Upfront financial cost</u>			
<i>Green Deal Assessment Costs¹¹¹ (weighted average, assuming 80% free, 20% paid £112.50)¹¹²</i>	£24	£24	£24
<u>Delayed financial cost</u>			
<i>Green Deal Credit Repayments During Void Periods (over 7 years)¹¹³</i>	£62	£170	£106
<u>Non-financial cost</u>			
<i>Understanding the Regulations</i>	£10	£10	£10
<i>Hidden costs (we assume the majority of these costs will be non-financial but some financial costs might be incurred)</i>	£12	£34	£21
<u>Total Costs</u>	£108	£238	£161
<i>Increase in Property Value¹¹⁴</i>	£3,086	£3,086	£3,086
Total Benefits	£3,086	£3,086	£3,086
NPV (to landlords)	£2,978	£2,848	£2,925

Source: DECC analysis using the domestic EPC PRS Policy Package Model

¹¹⁰ See Section 7 for a description on how the increase in market value was estimated.

¹¹¹ As outlined in Sections 3 and 7, existing evidence suggests that around 80% of assessments are currently being offered free of charge (see the published Green Deal Assessment Research for more information: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/271608/Waves_1_2_and_3_plus_wave_1_follow_up_-_full_report_P23_-_24_-_FINAL.pdf). Where landlords are not charged for their Green Deal assessments and have not received ECO subsidy, we assume that the costs of these assessments are recouped as part of the Green Deal loan repayments. This means that landlords will pay a small portion of the assessment charge while the property is vacant.

¹¹² Landlords, which are treated as businesses for the purposes of the IA, are assumed to be able to re-claim VAT costs on Green Deal Assessment. This reduces the Green Deal assessment charge slightly to around £107.

¹¹³ These Green Deal loan repayments during void periods include a portion of an assumed Green Deal set up charge of £63. This set up cost is assumed to be recouped by the Green Deal Finance company over the lifetime of the loan (consistent with treatment in the ECO IAs), which means that this cost is mostly borne by the tenant.

¹¹⁴ Data limitations mean that it has not been possible to differentiate between the capital price uplift between properties of different sizes.

Landlords owning properties that do not meet the Golden Rule

166. Some landlords may find that their recommended improvements do not pass the Golden Rule and therefore may not undertake improvements that lead to the benefits outlined above. However:

- i. Landlords in any case are required to have or obtain an EPC for the property on let. The EPC component of a Green Deal Assessment is the largest cost component, which they are required to pay under existing legislation. Where the landlord has an EPC in place, they should be able to use one of the on-line tools to estimate savings potential, and the likely benefit of a Green Deal assessment.
- ii. Survey data indicates that assessments are, in a majority of cases, being offered free of charge.
- iii. The Minimum Standards target the least energy efficient properties, which are expected to have the largest potential for energy efficiency improvements.
- iv. Should there be small costs relating to a Green Deal assessments landlords may pass on such small costs through to tenants in marginally higher rents
- v. Landlords may choose to voluntarily undertake improvements where costs require a top up in funding, even if this is not required by the Regulations

167. Costs incurred by landlords that aren't able to take out a Green Deal plan are expected to be small, and in the unlikely event they do occur are expected to be limited to understanding the Regulations, assessment costs, and demonstrating a valid exemption from the Regulations¹¹⁵.

Non-domestic private rented sector

168. As discussed in Section 7, we do not have statistically significant data to demonstrate that an increase in market value occurs when improvements are made to the energy efficiency of buildings in the non-domestic PRS. However, we expect that an improvement in value will be delivered, based on international evidence suggesting that an increase in property values does occur even within the non-domestic PRS. We have therefore been unable to quantify the impact to landlords owning properties in the non-domestic PRS.

10.2 Impact of the PRS Regulations on the domestic housing market

The Impact of Regulations on the PRS

169. Studies on the relationship between regulation and the size of the private rented sector suggest the relationship is ambiguous. For example, a study conducted by the London School of Economics (LSE)¹¹⁶ found that stringent Regulations within the PRS are not inherently associated with smaller sector size. It notes that some of the largest private rented sectors (based on its percentage of the overall domestic building stock), notably in Germany, have the most stringent PRS Regulations.

170. Another LSE study¹¹⁷ finds that, internationally, there is no clear relationship between the change in level of regulation over the past few decades and the change in size of the PRS sector, and that other factors, such as taxation, subsidies and social housing could be just as important as regulation in determining the size of the sector. This study also notes that in many countries, decreases in regulation have historically been associated with decreases in the size of the sector.

171. In the UK, the LSE study notes that while the level of regulation in the PRS has decreased (while the size of the sector has increased), this appears more to do with the expansion of the buy to let market, rather than

¹¹⁵ As discussed in Section 7

¹¹⁶ http://www.lse.ac.uk/geographyAndEnvironment/research/london/events/HEIF/HEIF4b_10-11%20-newlondonenv/prslaunch/Book.pdf

¹¹⁷ <http://www.lse.ac.uk/geographyAndEnvironment/research/london/pdf/The-Private-Rented-Sector-WEB%5b1%5d.pdf>

due to a decrease in the level of regulation. The study also argues that investment is unlikely to be affected by regulations. This is because in countries like the UK, at the point of investment, the investor knows that it is relatively easy to transfer properties between different tenure types.

172. While the majority of the evidence suggests that regulations do not have a negative impact on the size of the PRS, some studies suggest regulations can have a negative impact. Ball (2004)¹¹⁸, for example, notes that higher quality housing will limit tenant choice, limiting their option of accepting lower quality housing for lower rent.

173. Turner and Malpezzi (2003), summarise the existing studies on the relationship between regulation and the size of the PRS sector, stating “regulation per se is neither good nor bad. What matters are the costs and benefits of specific Regulations under specific market conditions”¹¹⁹.

Investment Drivers within the PRS

174. Investment in the private rented sector is similar to other types of investment – namely that the expected net present value of an investment should be at least as high as substitute investments, and ideally should pass some minimum (or hurdle) rate of return¹²⁰. Landlords will consider the costs and benefits to them as set out in table 18 above.

175. Research suggests that the most important factor in whether or not to invest in the PRS is the anticipated capital appreciation, with rental income of secondary consideration. For example, a report by Shelter¹²¹ (summarizing the findings of other studies) states: “The overwhelming majority of returns over the next fifteen years are likely to stem from house price changes rather than rental income. This has been the model for residential investment over the past decade or more and seems unlikely to change. As a result, changes to rental terms and conditions have only a marginal effect on overall investment returns” (paragraph 7.1.18)

176. With capital gains expected to be the key driver of investment within the domestic PRS, the Regulations are unlikely to hamper investment. For example, there is wide body of international research suggesting that improving the energy efficiency of properties increases a property’s value and/ or rent levels, as outlined in the Section 7.

Potential Investment Displacement

177. Investment in energy efficiency could also displace other productive investments. This situation could arise, for example, if landlords were credit constrained, and therefore had a limited amount of funds to invest in their properties.

178. Investment in energy efficiency under the PRS Regulations is unlikely to cause displacement, however, as the investment is predominantly funded by the tenant, not the landlord. This is not to the detriment of the tenant, as they also benefit from lower energy bills (net of Green Deal credit repayments).

179. Similarly, landlords involved in construction activity (for example in installing larger energy efficient measures in properties out of scope of these Regulations) are unlikely to change their behaviour as a result of PRS. Again this is because they incur only a small fraction of the costs in most cases.

¹¹⁸ Ball, Michael (2004) *The Future of Private Renting in the UK*. London: Social Market Foundation.
<http://www.smf.co.uk/assets/files/publications/TheFutureofPrivateRentingintheUK.pdf>

¹¹⁹ <http://ww.bus.wisc.edu/realestate/documents/Rent%20Control%20Recent%20Literature%20Malpezzi%20Turner.pdf> (see page 6)

¹²⁰ This rate of return is typically around 6%, according to the RLA <http://theehp.com/wp-content/uploads/2012/06/RLA-Response-to-Prof-Ball-Report.docx>

¹²¹ http://england.shelter.org.uk/__data/assets/pdf_file/0004/569641/Jones_Lang_LaSalle_PRS_Shelter_report.pdf

Jobs and growth

180. Driving demand for energy efficiency may support jobs in the green construction sector. The gross number of jobs sustained through domestic PRS policy will be dependent on the manner in which the Regulations are imposed. Under the 'soft start' scenario (in which all new leases are exposed to the Regulations), the employment effects will be less intense than under the 'hard start' scenario, whereby all applicable properties will be exposed at the same point in time.

181. Estimates of the number of jobs sustained within the domestic PRS can be found in Annex G.

Rent affordability

182. Demand for housing within the private rented sector is relatively unresponsive to rent levels, partly due the inability of tenants within the PRS to obtain suitable alternative forms of accommodation in either the owner occupier or social housing sector. This makes it likely that landlords will be able to pass through some, if not most, of the costs they incur as a result of the Regulations onto tenants in the form of marginally higher rents. Overall costs of occupation for tenants however may be lower or unchanged due to energy bill savings from an improved property. This is especially likely to be the case where improvements are part funded through ECO or other energy efficiency support schemes/grants.

183. As outlined in Sections 3 and 10, the costs of the Regulations to landlords are expected to be small, with the majority of costs borne by the tenant. As only a small subset of PRS properties are expected to act in any given year¹²², costs may be passed on over several years, limiting the rate at which landlords pass on costs.

184. A more detailed discussion on the drivers of rent affordability can be found in the Department for Communities and Local Government Impact Assessment on rent affordability.¹²³

¹²² For example, 11% of domestic PRS properties have an F- or G-rating. Early movers and the soft start under two of the policy options will ensure that only a fraction of this 11% will act in any given year post 2018. Some of the stock will also be exempt.

¹²³ The issue of rent affordability more generally is addressed elsewhere. For example, DCLG recently published an impact assessment on increasing rent affordability https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6021/1918816.pdf / also, the 2013/14 report from the Communities and Local Government Select Committee <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmcomloc/50/50.pdf> includes recommendations for how to increase investment in the PRS to increase affordability.

11. Wider Impacts

11.1 Equivalent Annualised Net Cost to Business (EANCB)

185. This section of IA looks at the direct costs and benefits to businesses to calculate the equivalent annualised net cost to business, which is calculated to assess net impact of the Regulations for one in, two out purposes. Direct costs or benefits are defined in Better Regulation Executive guidance as costs or benefits that can be identified as resulting directly from the implementation or removal/simplification of a regulation¹²⁴.

186. For One-in-Two-Out (OITO) purposes we assume that all landlords are businesses. In addition, we assume that all non-domestic tenants are businesses.¹²⁵

11.1.1 Direct Costs and Benefits of the in the Domestic PRS

Direct Costs

187. All monetised costs to businesses are considered to be direct. For landlords in the domestic sector this implies the following are direct costs:

- (i) Green Deal assessment costs (where not provided free)
- (ii) Costs of understanding the Regulations
- (iii) Some of the hidden costs (shared with the tenant)
- (iv) Green Deal credit repayments during void periods

188. There are no monetised costs to landlords that are treated as indirect.

189. These costs are expected to be passed onto tenants over time through rent. However, as they are incurred by landlords first, they have been treated as direct costs for the OITO purposes.

190. In the non-domestic sector (where both landlords and tenants may be classified as a business) all costs are considered to be direct and included in the OITO calculation.

191. The annual direct costs used for the OITO calculations are estimated to be £68.7m; the breakdown of these costs is shown in the table below.

Direct benefits

192. Energy savings are direct, and in practice are split between landlords who benefit from possible increases in property values, and tenants who benefit from lower bills. This is discussed in detail in Section 7. These benefits are direct as they accrue automatically as a result of installing the mandated energy efficiency measures with no further action required.¹²⁶

124 Definitions of direct costs and benefits can be found within the Better Regulation Framework Manual, along with the methodology used to calculate the annualised equivalent net cost to business
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211981/bis-13-1038-better-regulation-framework-manual-guidance-for-officials.pdf

¹²⁵ In practice, a small number of non-domestic tenants will be public sector. For this consultation IA it has not been possible to quantify what impact this may have and so have assumed all non-domestic tenants are businesses. We will review this assumption in the final stage IA.

¹²⁶ For the vast majority of tenants, no action will be required in order to accrue these savings. For example, improved insulation will warm the property more quickly reducing the need for the heating to be on for long periods of time. Though a small number of measures may require some action on the part of the tenant in order for the benefit to accrue, it has not been possible to quantify the proportion at this stage. For this reason, we make the simplifying assumption that all of the energy bill reductions business tenants get as a result of installing energy efficient measures are direct.

193. In the domestic sector, the direct benefits are the possible increase in property values accruing to landlords. This potential benefit to landlords, stemming from a possible increase in their property's value upon making energy efficiency improvements, was quantified using the hedonic pricing study (and the methodology), discussed in Section 7. This study draws a direct link between the energy efficiency of a property and that property's value, with increases in the former being associated with higher values for the latter, all other things being equal. We therefore assume, for the purposes of this IA, that an increase in property value occurs after making the energy efficiency improvements, and it is this wealth increase (i.e. landlord assets are now worth more money) that counts as a direct benefit.

194. In the domestic sector, the direct benefits are the possible increase in property values accruing to landlords. In the non-domestic sector the direct benefits are the increased property values accruing to landlords and the reduction in energy bills accruing to business tenants¹²⁷.

195. By splitting out energy savings distributionally in this way, there is no 'double counting' of benefits.

196. Due to a lack of evidence in the non-domestic sector, it has only been possible to quantify property value benefit for domestic landlords. The consultation document seeks views and evidence on the costs and benefits associated with installing energy efficiency measures.

197. As both tenants and landlords are classified as businesses in the non-domestic PRS, and because increases in property values do not feature in the non-domestic element of the EANCBC calculation, the issue of double counting energy savings is absent.

198. The other benefits of the Regulations discussed elsewhere in the IA are deemed indirect and do not feature in the OITO calculation.

199. The annual direct benefit used for the OITO calculations is estimated to be £107.4m. This is calculated from the benefits as described in Section 7.2.

Net OITO position

200. The net OITO position, based on the equivalent annual net cost to business (EANCBC), is shown in Table 19 below. The direct costs and benefits occur between 2014 and 2070. Current estimates show the direct benefits outweigh the direct costs. The measure is therefore a 'Zero Net Cost' regulatory measure.

Table 19 Equivalent Annual Net Cost to Business

Policy Option	Option 1.	Option 2.	Option 3.
EANCBC (£m), 2009 prices	-£38.7	-£42.7	-£47.1

201. The breakdown of the equivalent annual net cost to business is shown in Table 18 below. As only landlords are treated as businesses in the domestic sector, and only bear a fraction of the overall costs of installing the energy efficiency measures (Green Deal credit payments during void periods, 75% of the hidden costs, and Green Deal assessments, where a fee is charged), domestic costs (£1.3m) only contribute a fraction of the overall EANCBC. The benefits to domestic landlords is a possible increase in their property's market value after improving the energy efficiency, although these again form a small part of the overall EANCBC (-£8.6m).

¹²⁷ Bills savings in the domestic PRS have not been included in the EANCBC because tenants in the domestic sector are not classified as businesses.

202. The largest components of costs and benefits are in the non-domestic sector, where both the landlord and tenant are treated as businesses. The gross bill savings of around £98.8m outweigh the total costs to both tenants and landlords of around £66.5m. Non-domestic costs include all costs incurred by the landlord and tenant (including installation and Green Deal finance costs).

203. Finally, there are small costs associated with complying with Regulations for domestic and non-domestic landlords, although these comprise a very small fraction of overall costs (£0.9m).

Table 20 Breakdown of EANCB by Component

	Component	EANCB (£m)
Costs	Landlord Share of Domestic Costs	£1.3
	Landlord/ Tenant Share of Non Domestic Costs	£66.5
	Compliance Costs	£0.9
Total Costs		£68.7
Benefits	Tenant Gross Bill Savings	-£98.8
	Increase in Property Value	-£8.6
Total Benefits		-£107.4
Net EANCB		-£38.7

11.2 Small and Micro Business Assessment

Characteristics of Businesses within the PRS

204. Table 19, below gives the breakdown of portfolio size for landlords. This shows that the majority of landlords own one property (78%) and only around 1% of landlords own 25 or more properties.

205. This distribution is based on all PRS properties, rather than the number of properties that are specifically 'F' and 'G' rated. This means we are unable to analyse the portfolio size of these types of landlords owning one or more of these types of properties.

Table 21 – Properties Owned by domestic landlords

Number of Properties	Percentage of Landlords
1	78%
2-4	17%
5-9	3%
10-24	1%
25-100	1%
>100	0%

Source: DCLG Private Rented Sector Landlords' Survey 2010

206. Table 22 sets out the percentage split of rented commercial property ownership in the UK. Around 89% of rented commercial property is owned by UK Institutions, overseas investors, collective investment schemes, UK Real Estate Investment Trusts and listed property companies, suggesting that only a small minority of rental properties are likely to be owned by small to micro businesses. We welcome evidence from consultees on the number (or percentage) of non-domestic landlords in England and Wales that might be deemed small and micro businesses.

Table 22 – Commercial property ownership in the UK¹²⁸

Type of Owner	£bn	% Change 2003-12	% of Total
<i>UK institutions (insurance companies and pensions funds)</i>	78	-4	22
<i>Overseas investors</i>	76	106	22
<i>Collective investment schemes</i>	68	127	20
<i>UK REITS and listed property companies</i>	50	38	14
<i>UK unlisted property companies</i>	38	3	11
<i>Private investors</i>	12	50	3
<i>Traditional estates/ charities</i>	13	0	4
<i>Other</i>	13	8	4

Source: British Property Federation

Classification of PRS Landlords as small and micro businesses

207. As most landlords in the domestic PRS only own 1 property (and discussed above), it seems appropriate to make the conservative assumption that all landlords in the domestic sector should be classified as small or micro businesses for the Small and Micro Business Assessment. It should be noted, however, that most landlords obtain at least 25% of the income from other sources, according to the Private Rented Sector Landlords survey¹²⁹, which means that classifying most (if not all) landlords as small and micro businesses may be a conservative estimate.

208. There is no robust estimate available for the number of landlords in England and Wales. However, the National Landlords Association represents around 1.4 million domestic landlords across the UK¹³⁰. Given most landlords only own one property (as discussed above), and therefore highly unlikely to require more than 49 staff, this suggests approximately 1.4 million small and micro businesses are affected by the Regulations. In contrast, very few medium or large businesses will be directly affected.

209. It has not been possible to estimate the number of small and micro businesses in the non-domestic PRS, as the data needed to make this assessment is not available. As part of the consultation we hope to acquire more evidence to inform such an assessment.

Rationale for the non-exclusion of small and micro businesses from the Regulations

¹²⁸ http://www.bpf.org.uk/en/files/reita_files/property_data/BPF_Property_Data_booklet_2013_spreads_web.pdf. There is no data on the number of landlords in England and Wales.

¹²⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7249/2010380.pdf

¹³⁰ <http://www.landlords.org.uk/membership>

210. As we estimate that all domestic landlords should be classified as small and micro business for the purpose of this assessment, their exclusion would remove most if not all, of the intended benefits of the policy.
211. Many of the costs incurred by landlords as a result of the Regulations are likely to be on a per-property basis – meaning that landlords with small property portfolios (and therefore deemed to be small or micro businesses, as discussed above) will not be disproportionately burdened by the Regulations. These costs, should they occur, are likely to involve: the costs associated with undertaking Green Deal assessments (where not provided for free), Green Deal repayment costs during void periods (where Green Deal credit is used), and the costs of obtaining relevant permissions should they be required (for example, freeholder consent).
212. With the costs of understanding the Regulations, however, there are clear economies of scale – with landlords with large property portfolios able to spread these costs over a large number of properties. Other costs, such as organising finance or installation could also benefit from economies of scale, meaning that those landlords that own many properties may face less hidden costs per property than smaller landlords. However, economies of scale are a natural advantage of larger firms and as such should not be attributed to the design of policy. Regulation would offer equal opportunities and requirements for each property, regardless of the owner.
213. It should also be noted that while small and micro businesses comprise most of the sector, only a small minority of businesses are required to take action as a result of the Regulations, with only landlords owning the least thermally efficient properties (those F and G rated) required to make energy efficiency improvements. These comprise around 11% of the domestic PRS and 18% in the non-domestic PRS. With the proportion of F and G rated properties falling over time, it is likely that an even smaller proportion of properties will need to act by the time the Regulations come into force in 2018.

Mitigating the impact on small and micro businesses

214. The Regulations include provisions to protect landlords that might suffer disproportionately from the Regulations. For example, a landlord will be able to refuse tenants requests for upgrades on the grounds of reasonableness in some instances.
215. Similarly as outlined in Section 3 (which sets out the policy design) and Section 10 (which sets out the examples of costs and benefits to individual landlords), landlords are not expected to be made worse off as a consequence of the Regulations.
216. The Government is also committed to laying the Regulations as soon as possible. This will not only provide certainty to the industry, but will also allow them time to voluntarily meet the minimum standard in advance of the Regulations coming into force if they wish to¹³¹. Also, the proposed ‘soft start’ we are consulting on, where the trigger point for landlords actions is the start of new tenancies, will give landlords further discretion around when to carry out the works. For example, the stipulation that landlords only have to comply at the start of new tenancies will allow them the option to complete the upgrade works during the void period before the new tenant moves in, which is also likely to reduce any hidden costs associated with the upgrades¹³².
217. It is also possible that some of the burden faced by some small and micro landlords is partially offset through the use of letting agencies. These agencies may, in some instances, bear the costs of understanding the Regulations¹³³, and can therefore advise landlords using the agency about compliance. Agents are likely to

¹³¹ They could carry out the work as part of the property/properties normal refurbishment cycle, for example.

¹³² The average void period in the domestic sector is around 3 weeks a year, according to ARLA’s PRS landlords survey <http://www.arla.co.uk/media/466322/ARLA-PRS-Report-Q4-13.pdf>

¹³³ Many letting agencies may also be classified as small and micro businesses. However, the costs borne by letting agencies is expected to be very small.

have economies of scale as they may manage a number of properties on behalf of landlords. However, this will only help offset the costs in a small number of instances, with around 68% of small landlords not using letting agencies when letting out a domestic property¹³⁴.

218.If the Regulations place additional burden on small businesses, a related question is how much of a burden the PRS Regulations are likely to be. Repair and maintenance (something closely related to upgrading the energy efficiency of a property), for example, is not perceived as a major issue for landlords, with only a tenth (10%) of landlords considering the cost of repairs to be a serious problem –as was the related question of finding reliable builders or tradesmen (and 60% perceiving that the cost of repairs was not a problem).

219.The policy has been designed to recognise that allowing landlords more time to meet the minimum standard before the Regulations apply may not, on its own, fully offset the burden that may be placed on landlords as a result of the Regulations. As a result, the consultation that accompanies this impact assessment requests views on how to ensure the regulations can be clear and simple, especially for small and micro businesses.

11.3 Justice Impact

220. The impact of the PRS Regulations on the justice system can be found in the attached justice impact assessment (see Annex H).

221.We intend to quantify the impact on the justice system within the final PRS Regulations IA following feedback on our consultation.

11.4 Equality Impact

222.This section of the IA provides an assessment of the PRS Regulations against the protected characteristics of age, disability, gender, gender-reassignment, marriage and civil partnerships, pregnancy and maternity, race, religion or belief and sexual orientation, as specified in the Equality Act 2010. It also outlines where changes have been made to ensure all opportunities to promote equality are taken. Where a particular protected characteristic is not listed below for a policy sub-heading, it is because there is no evidence that people with this protected characteristic are more or less likely to benefit from the policy or are discriminated against by the policy.

Age

223.In the PRS young adults are overrepresented (68% of those under 24 years old live in the PRS). Over 55s are underrepresented with only 5% in the PRS and a much higher proportion in owner occupation.

Table 23 – Proportion of Age Group Living in the PRS

Age	Proportion in PRS
16-24	68%
25-34	41%
35-44	20%
45-54	12%
55-64	7%
65 or Over	5%

Source: *English Housing Survey, 2011-12.*

¹³⁴ Source: <http://www.bdrc-continental.com/media-centre/landlords-panel-on-use-of-lettings-agencies/>

224. Because of this skew, if regulation of private landlords was brought into force it could do more for young adults. This would be a positive impact as it will be contributing to promoting equality across all groups.

Gender

225. Lone parents comprise around 9% of all PRS tenant households, but around 31% of private renting households on housing benefit¹³⁵).

226. Improving the energy efficiency of the housing stock in the private rented sector could have a particular positive effect on this section of society, with benefits for single mothers. It is not possible to draw any more detailed inferences about ramifications for gender equality. It will be important to look to maximise benefits when developing secondary legislation.

Ethnicity

227. The least populous ethnic minorities are the more highly represented in the PRS. These groups may stand to gain most if Regulations are brought into force.

228. The breakdown of ethnic groups in the PRS is shown below.

Table 22 – Ethnicity within the PRS

Ethnic Group	Percentage within the PRS
<i>White</i>	16%
<i>Black</i>	28%
<i>Indian</i>	32%
<i>Pakistani or Bangladeshi</i>	23%
<i>Other</i>	41%
<i>All Ethnic Minority</i>	33%

Source: English Housing Survey, 2011-12

Disability

229. 35% of fuel poor households contain someone who is registered disabled or long term sick¹³⁶

230. Though Government does not have statistics specific to the PRS it is reasonable to assume that, as the PRS has the highest proportion of non-decent homes and homes that fail to provide a reasonable degree of thermal comfort the regulation of private landlords would have a positive effect on the long term ill/disabled. However, it is not possible to draw any more detailed inferences about the likely impacts.

Human Rights

231. Proposals for the private rented sector engage Article 1 of Protocol 1 to the European Convention on Human Rights, as they will affect landlords "property rights by controlling the use of rented property".

¹³⁵ The Rugg Review <http://www.york.ac.uk/media/chp/documents/2008/prsreviewweb.pdf>

¹³⁶ In 2011 under Low income high costs measure 34.9% of all fuel poor households contain someone with a long term illness/disability. Source: <https://www.gov.uk/government/publications/fuel-poverty-2011-detailed-tables>

Health impacts

232. Living in cold conditions is linked to a number of detrimental physical and mental health impacts. A number of studies have concluded that inadequate levels of heating and other factors associated with fuel poverty are linked, in particular, to respiratory problems in children and an increased risk of mortality in older adults¹³⁷. Other sources also highlight the risk of respiratory problems among adults and the potential development of influenza, pneumonia and asthma, alongside an increased risk of arthritis and accidents at home linked to poorly heated housing¹³⁸.
233. The PRS Regulations will reduce the stock of low quality buildings, which should substantially reduce the number of people living and working in cold conditions. This is closely linked with the impact of the Regulations on Fuel Poverty – see Section 2.

¹³⁷ For example, Green, G. and Gilbertson, J. (2008). *Warm Front Better Health: Health Impact Evaluation of the Warm Front Scheme*. CRESR; Wilkinson, P. et al (2001). *Cold Comfort: the social and environmental determinants of excess winter deaths in England, 1986-96*. Policy Press; The Eurowinter Group (1997). Cold exposure and winter mortality from ischaemic heart disease, cerebrovascular disease, respiratory disease, and all causes in warm and cold regions of Europe. *The Lancet*, 349, 1341-1346.

¹³⁸ Liddell, C. and Morris, C. (2010). Fuel Poverty and Human Health: A Review of Recent Evidence'. *Energy Policy*, 38(6), 2987-2997.

Annexes

Annex A – Policy Coverage and Compliance

Exemptions

234. The PRS Regulations will only apply to those properties that require an Energy Performance Certificate (EPC). Exclusions for certain buildings are set out in the accompanying DCLG guidance documents¹³⁹¹⁴⁰. However the PRS regulations are proposed to apply where an EPC exists for the property and only part of the property is let (such as an individual room) on a PRS tenancy in scope, even though in this situation an obligation under the EPC regulations would not apply.

235. Most of the exemptions from the PRS regulations will be confined to a very small percentage of the overall PRS stock. Two possible exceptions are homes in multiple occupation and listed buildings (see below).

Houses in Multiple Occupation (HMOs)

236. A property falls under the category of a houses in multiple occupation if at least 3 tenants live in the property, forming more than 1 household¹⁴¹, where the tenants share toilet, bathroom, or kitchen facilities with other tenants¹⁴².

237. Official statistics suggest that around 400,000 domestic PRS properties in England and Wales fall under this definition of HMO, which means that they comprise around 10% of the PRS building stock's 4.2m premises¹⁴³. Whether an HMO is required to obtain an EPC depends on the particular set-up of the property and/ or tenancy agreement¹⁴⁴. Any HMO requires an EPC when it is brought or sold, however, rooms let on an individual basis within an HMO do not currently trigger a requirement for the property to have an EPC.

238. As there is no requirement to obtain an EPC on let of an individual room, many HMOs are unlikely to have an EPC, and are therefore unlikely to fall within scope of the PRS regulations.

Listed buildings and ancient monuments

239. Data on the number of listed buildings within the domestic PRS stock is not known. However, DCLG's impact assessment on the recast of the Energy Performance of Buildings Regulations¹⁴⁵ provides estimates of the number of these building types. This reports that there are approximately 374,000 listed buildings in England, and notes that while *"listing a building is not the same as issuing a preservation order, this figure*

¹³⁹ Domestic sector guidance

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307556/Improving_the_energy_efficiency_of_our_buildings_-_guide_for_the_marketing__sale_and_let_of_dwellings.pdf

¹⁴⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/50268/A_guide_to_energy_performance_certificates_for_the_construction_sale_and_let_of_non-dwellings.pdf

¹⁴¹ A household consists of either a single person or members of the same family who live together. It includes people who are married or living together and people in same-sex relationships.

¹⁴² More details on how HMOs are defined can be found on the Government Website <https://www.gov.uk/private-renting/houses-in-multiple-occupation>

¹⁴³ Data on the number of HMOs in England can be found in the Housing Strategy Statistical Appendix <http://data.gov.uk/dataset/england-hssa-housing-strategy-statistical-appendix#> and figures for Wales can be found at StatsWales <https://stats.wales.gov.uk/Catalogue/Housing/Hazards-and-Licences/HousesInMultipleOccupation-by-Area>

¹⁴⁴ Details on which HMOs are required to obtain an EPC, and which aren't, is contained within the DCLG's EPC Guidance https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/50816/A_guide_to_energy_performance_certificates_for_the_construction_sale_and_let_of_dwellings.pdf

¹⁴⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/39379/Impact_Assessment.pdf

does give a proxy for the total number of buildings that come within the first category noted above, i.e. buildings officially protected as part of a designated environment or because of their special architectural or historic merit” (page 8). As the IA also notes, a further 20,000 buildings are listed as ancient monuments. This implies that around 400,000 buildings may fall into the category of a listed building or ancient monument. Around 25% of these lie within the private domestic sector (equivalent to approximately 100,000 buildings).

240. Data on the tenure of these building types is not available. However, using the fact that the PRS comprises 18% of the total building stock in England and Wales as a proxy, and around two thirds of the stock are owner occupied this would suggest that around 22,000 properties in the PRS could be exempt from obtaining an EPC because they are either a listed building or ancient monument (of the 100,000 within the private domestic sector outlined in the IA above). This represents less than 1% of the 4.2 million PRS properties in England and Wales.

241. Taking these exemptions into account, around 3.8m properties across the total PRS stock would be required to obtain an EPC and around 430,000 of these would have an EPC rating of an F or G.

Demonstrating exemption

242. In some instances, landlords owning properties with an EPC rating of less than an ‘E’ carrying out a Green Deal Assessment may not pass the Golden Rule, granting them a temporary exemption from carrying out energy efficiency works to increase the EPC rating of the property. The length of time that such an exemption would last before a landlord must re-attempt to meet the standard is part of the consultation.

243. One possible design is for landlords to satisfy themselves that a property is compliant with the Regulations, and that they have met any evidence gathering requirements as necessary to show that where their property remains below an E, they have a valid exemption. If a landlord cannot provide sufficient evidence for a valid exemption, enforcement agents could impose a civil penalty.

244. Without taking steps to require information from landlords, it could be hard to distinguish properties that are likely to have an exemption from those that are not likely, without taking steps to require information from landlords could be challenging. Furthermore landlords may wish to know for certain that they have met the conditions of an exemption before letting the property. The Consultation is therefore exploring ways in which exemptions could be certified upfront. One possibility is that landlords could be encouraged to voluntarily apply for certification of an exemption from their local authority. Another possibility is to make certification of an exemption mandatory, and therefore properties let below standard would be in breach if let without certification of an exemption.

245. This IA does not make an estimate of exemption costs, including how costs relating to certification of exemption would be calculated and paid for, due to the lack of data and range of policy options being explored. It is intended that estimates of these costs will be included in the final IA, making use of information from Consultation responses.

Compliance

Enforcement costs to local authorities

246. The Energy Act 2011 contains provisions for sanctions. For the domestic PRS, it identifies local authorities as the enforcement body and enables civil penalties not greater than £5,000 in the event of non-compliance or provision of false information about compliance. For the non-domestic PRS, Trading Standards Officers (TSOs) will enforce the Regulations and no penalty cap applies in the primary powers. The Energy Act also requires provision for appeals to a court or tribunal.

247. It is expected that local authorities and TSOs will enforce these new Regulations alongside their existing duties of enforcing EPCs in the PRS. Consequently, minimal additional costs are expected, although views from respondents are welcome if any evidence is available on likely costs.

Compliance costs to landlords

248. Landlords will face compliance costs which include the costs of understanding the Regulations and, where applicable, costs associated with demonstrating a valid exemption from carrying out energy efficiency works under the Regulations.

Understanding the Regulations

249. Guidance on the Regulations for landlords is likely to be issued following the laying of the secondary legislation. It is difficult to estimate how much time it will take landlords to understand the guidance. Understanding the guidance should be relatively quick in those cases where: letting agents read and summarise the guidance or advise landlords; or where the landlord's PRS property already has an EPC ratings of 'E' or higher, meaning they are already in compliance with the Regulations. For those without a valid EPC and who are due to take on new tenants, the process may take longer.

250. For the purposes of this IA it has been assumed that, on average, it will take landlords one hour to understand the Regulations. It has been further assumed, for simplicity, that the time will be incurred in the year prior to the first component of the Regulations (the tenants' rights) coming into force i.e. in 2015. Using an average wage rate to represent the opportunity cost to landlords of reading and understanding the Regulations, this equates to £11.62 per hour per landlord¹⁴⁶.

251. As outlined in section 11.2, there are around 1.4 million domestic sector landlords within the UK. With most of the UK's building stock based in England and Wales, most of these landlords will need to familiarise themselves with the Regulations to ensure compliance, although those with an EPC rating of an E or above would not need to spend much time investigating the policy detail. This implies a total present value cost of around £16m¹⁴⁷.

252. The number of non-domestic landlords is unknown. However, as noted earlier, there are around 1.8m commercial hereditaments in England and Wales, of which around 66% (by market value) are in the PRS. Using the conservative assumption that each landlord owns two properties, this implies there could be up to 600,000 commercial property landlords. Commercial property landlords, however, may have to invest more time in understanding the implications of the Regulation for their commercial interests, so we have assumed it will take these individuals two hours to understand the Regulations. This suggests a total present value cost of around £13m (in net present value terms) for landlords to understand the Regulations.

253. The number of new landlords entering the market each year is unknown so no estimate has been made to cover this group. The number is, however, expected to be small.

¹⁴⁶ This wage rate is based on the median gross hourly wage across all workers, according to the 2013 Annual Survey of Hours and Earnings <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-328216>. We have assumed no growth in nominal wages between 2013 and 2015.

¹⁴⁷ No data is available on the number of landlords owning domestic PRS properties in England and Wales, so this calculation (applying to all landlords in the whole of the UK) may be an over-estimate.

Annex B – Broad policy objectives

Reduce UK Greenhouse Gas (GHG) emissions

254. The Climate Change Act 2008 created a legal requirement for the Government to reduce UK GHG emissions by at least 80% by 2050 relative to 1990 levels. Within this overall target, the first three carbon budgets (2008-22) require GHG emissions to fall by at least 34% by 2020 relative to 1990 levels. The fourth carbon budget (2023-2027) requires at least a 50% reduction in emissions by 2025 relative to 1990 levels.

255. In 2009, buildings were responsible for 213 MtCO₂e which was around 38% of the UK's total GHG emissions (of around 562 MtCO₂e). Within this, domestic buildings were responsible for around 25% of emissions and non-domestic buildings 12%¹⁴⁸. Therefore, the UK's carbon budgets, and legally-binding 2050 carbon target, cannot be met without reductions in GHG emissions relating to buildings.

256. Meeting the UK's legally-binding target to reduce GHG emissions by 80% by 2050 should be achieved at the lowest cost to consumers, businesses and society. Improving the energy efficiency of buildings is one of the most cost effective ways of reducing emissions. DECC's recently-published Energy Efficiency Strategy¹⁴⁹ quantifies the cost effectiveness of energy efficiency. It shows that the installation of energy efficiency measures are among the most cost effective ways of reducing energy demand and abating carbon. The Energy Efficiency Strategy's Marginal Abatement Cost Curve shows that the installation of energy efficiency measures often has negative costs. This occurs due to the benefits of the installation of such measures outweighing their cost.

Increase security of energy supply

257. The UK is becoming increasingly dependent on fossil fuel imports, leaving the UK more exposed to risks from rising global demand, limitations on production and price volatility. UK production of oil and gas has fallen from 134% of national demand in 2000 to 71% of demand in 2010. Published projections show a further fall to 48% in 2020¹⁵⁰.

258. Maintaining security of supply against the backdrop of rising reliance on imports requires three complementary actions:

- i. Ensuring that the UK has strong, resilient markets and infrastructure
- ii. Securing our energy supplies through greater use of domestic supplies and managing our relationships with other countries
- iii. Reducing domestic demand for energy.

259. Increasing the energy efficiency of homes should help reduce energy demand and thus reduce our reliance on fossil fuels.

Drive economic growth, innovation, and sustaining jobs

260. Increased demand for energy efficiency measures will likely support growth and jobs within the green construction industry and the wider supply chain for energy efficiency measures. Greater competition within these markets may also spur innovation, lowering the end costs of installing measures to households, and help sustain jobs. The estimated jobs sustained as a result of the PRS Regulations are outlined in Annex G.

¹⁴⁸ Source: The Carbon Plan. The statistics can be found here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/139583/6119-methodology-to-derive-carbon-plan-headline-emissio.pdf (see emissions by end user).

¹⁴⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65602/6927-energy-efficiency-strategy--the-energy-efficiency.pdf

¹⁵⁰ Source: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/249323/production_projections.pdf

Annex C – Assumptions, Risks and Uncertainties

ECO policy

261. There are a number of key interdependencies between the PRS Regulations and the Energy Company Obligation (ECO). In particular, the presence of the ECO subsidies offers the possibility of blended packages of measures including more costly technologies such as solid wall insulation. The price of ECO points affects the amount of ECO subsidy available to households. Reducing the price of ECO will cut the number of households installing more costly measures, as they may not meet the Golden Rule. Increasing ECO will raise this number of households.

262. Recently proposed changes to the ECO policy mean that, from March 2014, more low cost measures will qualify for ECO support. These include easy-to-treat cavity wall insulation, and loft insulation. If agreed, this would increase the likelihood of more PRS properties achieving an EPC of E whilst meeting the Golden Rule.

Green Deal finance

263. This IA assumes households will be able to access Green Deal Finance, or other means of financing energy efficiency improvements if that is preferred. The only exception to this is where households have a poor credit history (see below).

Availability of non-domestic GD finance

264. GD finance is not currently available in the non-domestic sector although it is the intention of the Green Deal Finance Company to offer finance in the future, and other companies may be interested to offer finance in the sector as well.

Green Deal Credit Length

265. The credit length associated with a Green Deal Package will vary depending on the type of measures installed. Given the widespread heterogeneity of credit lengths, we have made the simplifying assumption that the credit length is 15 years for properties in the domestic PRS and 10 years for properties in the non-domestic PRS. This reflects the different lifetimes of the likely measures to be installed between the two sectors.

Exclusions

266. As discussed in Annex A, data on the number of properties that are not required to obtain an EPC and therefore do not need to comply with the regulation is not available. To account for these exclusions, 10% of the building stock was removed from the modelling.

Scotland

267. PRS Primary legislation is applicable to England and Wales only; Scotland is proposing separate legislation on improving energy efficiency for its privately rented properties. Our modelling data is therefore for England and Wales PRS building stock only.

Poor Credit Rating of Tenants

268. The ability to obtain Green Deal Finance depends on the tenant having a sufficiently good credit rating. It is estimated that around 20% of those applying for domestic Green Deal Finance will not be able to obtain finance due to their poor credit history. To account for this, we have reduced the building stock by 20% to account for those tenants with poor credit ratings. However where the landlord undertakes improvements during a void period (where there is no tenant in situ) an assessment is made by the landlord. Landlords are

likely to have on average a better credit rating than tenants and therefore it is likely that there will be a lower failure rate when a landlord undertakes a Green Deal in a void period.

269. The lending criteria within the non-domestic Green Deal Finance are yet to be established. As a result, we have not reduced the availability of non-domestic Green Deal finance.

Proportion of the non-domestic building stock that is within the PRS

270. While we know there are around 1.8 million hereditaments in the non-domestic sector, it is unclear how many of these buildings belong in the PRS. Estimates from the Investment Property Databank (IPD) and British Property Federation (BPF) provide estimates of between 21% and 66%, depending on whether you measure the proportion by floor space or by property market value, respectively. For the purposes of this impact assessment, we have assumed the latter.

Non-domestic lease lengths against periods of occupation

271. Data is not available on length of occupation in the non-domestic sector so we have used lease length as a proxy. The consultation document explores the potential for including lease renewal or extension as a trigger point for the regulations but the model is unable to differentiate between leases granted to an existing tenant and those provided to a new tenant. Periods of occupation are expected to be longer than the length of lease initially offered and this impacts the frequency in which the model applies the regulations to properties in the non-domestic PRS stock.

Representative nature of the non-domestic EPC data

272. Information drawn from the non-domestic EPC register provides a breakdown of EPC ratings for all properties that have lodged an EPC. This includes rented and owner occupied property. Due to a lack of data specifically on the profile of PRS properties, we have assumed that the profile of EPC ratings in the EPC register applies to the PRS stock.

EPC and PRS Compliance Rates

273. In the absence of robust data on the levels of compliance with the EPC Regulations, which require the provision of an EPC on letting a property, we have followed standard practice and assumed full compliance with the legislation. We would, however, welcome evidence on compliance levels to inform our final Impact Assessment. If evidence suggests that compliance is below 100% we will reduce our compliance level assumptions accordingly.

Grants/incentives schemes

274. Where local authority, devolved, or nationally available grants are made available that could help landlords reach the minimum standard (EPC E rating), such funding sources would need to be taken into account by landlords trying to reach the minimum standard. The availability of these schemes will vary in time and location and therefore we have not taken these into account in our modelling.

Annex D – Current main funding mechanisms available to domestic landlords

275. From 2013, two additional funding mechanisms have been available to help finance energy efficiency improvements in the domestic property stock: the Green Deal and the Energy Company Obligation (ECO).

276. **The Green Deal**, launched in January 2013, is a financing mechanism and a framework of advice, assurance and accreditation for the energy efficiency supply chain for homes and businesses. It enables the installation of energy efficiency improvements at little or no upfront costs, with payments recouped through customers' energy bills. A key facet of Green Deal finance is the Golden Rule, which states that Green Deal credit repayments should be no more than the estimated fuel bill savings as a result of making energy efficient improvements recommended within the Green Deal Advice Report. The aim is for the Green Deal and ECO (see below) to work together to address market failures and barriers in the energy efficiency market, with ECO providing additional support to delivery measures that will not be fully financeable through the Green Deal, and subsidised measures to low income and vulnerable households.

277. Green Deal finance is not currently offered for non-domestic properties, although assessments are available. The Green Deal Finance Company intends to make such finance available and other finance providers may also offer such finance.

278. **ECO** originally came into force on 1st January 2013 and places a legal obligation on obligated energy suppliers to meet carbon saving and heating cost reduction targets in the domestic sector by March 2015.

279. As set out in the Government's response to the Future of ECO consultation¹⁵¹, the Government will introduce changes to the existing ECO targets to 2015 and introduce targets for a further two year period to the end of March 2017. The government's assessment of the impact of these changes can be found in The Future of ECO consultation Final Impact Assessment.

280. As a result of ECO, energy efficiency measures in the domestic sector can be subsidised for qualifying households installing ECO-eligible measures. ECO will be available to many domestic PRS landlords, allowing them to increase energy efficiency of their properties at a lower cost.

Other domestic energy efficiency Incentives

281. As well as outlining changes to ECO, the 2013 Autumn Statement announced that £540 million will be made available over the next three years to boost energy efficiency. £450 million of this will be aimed at households and private landlords. This package will include:

- Funding for energy efficiency home improvements. Currently this incentive takes the form of the GD Homes Improvement Fund, which provides up to 75% of the cost of installing solid wall insulation (SWI). Support for SWI is capped at £6,000. Consumers can also apply for up to £1,000 towards the cost of installing 2 energy efficiency measures, either in addition to SWI, or on their own. For consumers who have recently moved home, a further £500 is available, and where people have paid for a Green Deal Assessment, they will be eligible for up to a £100 refund on their costs. The GD Home Improvement fund is available to owner occupiers as well as landlords and tenants, and take-up to date in the Private Rental Sector has been encouraging.
- DECC will be providing a further £76m over the three years commencing 2014/15 to build on the successful Salix Finance public sector energy efficiency loan scheme in England.

282. As the policy design of these schemes is still in formation, this IA does not attempt to model their impact. The impact will be considered in the final stage IA for the PRS Regulations when more details should be available.

¹⁵¹ This can be found here: <https://www.gov.uk/government/consultations/the-future-of-the-energy-company-obligation>

Annex E- Domestic EPC PRS Packages model (DEPP)

Model Overview

283. The Domestic EPC PRS Packages (DEPP) Model assesses the potential impact of the PRS Regulations. The model estimates the impact of the Regulations by assessing the PRS housing stock currently below an E rating (F or G rated), their exposure to the Regulations and the changes to the stock that will result from compliance with the Regulations.

284. The Domestic EPC PRS Packages (DEPP) model is used here to provide projections for the take-up of most energy efficiency measures recommended in household EPCs and Green Deal assessments. It assesses the possible impact the energy efficiency measures would have on different types of housing. It then determines the most cost-effective package of measures each housing type would need to install in order to reach an E rating, and considers whether this meets the Golden Rule and 'no upfront cost to landlords' constraints. For those households that cannot reach an 'E' rating, it assumes measures are taken up that still improve their energy efficiency within the Golden Rule constraint. The Golden Rule assessment includes ECO support for those that qualify for a primary ECO measure and are offered ECO support as per the model assumptions. Costs and benefits calculated include installation costs, carbon savings and energy savings.

F&G Rated PRS Housing Stock

285. The initial stock of PRS households with an EPC rating of F&G is taken from the Green Deal Household Model, adjusted to cover England and Wales only. This stock is categorised into 216 archetypes according to the following property characteristics:

- i. type of property (eg. detached/semi-detached/terraced house or flat);
- ii. heating fuel;
- iii. heating technology;
- iv. wall type (solid wall or cavity, including whether insulation has already been installed); and
- v. EPC rating – the average SAP score of all properties meeting the characteristics of the archetype

Potential EPCs

286. In order to provide an EPC score before and after a measure is installed, the model simulates a post-measure EPC on each property. This includes the following steps:

- i. Determine the suitability of each home to the range of the energy efficiency measures.
- ii. For each of the suitable measures the following are calculated:
 - i. energy savings (kWh)¹⁵²;
 - ii. energy bill savings (£);
 - iii. traded and non-traded CO2 savings;
 - iv. Golden Rule savings; and
 - v. the amount of ECO subsidy offered¹⁵³.
- iii. Each of the measures is applied in order to see the cumulative effect of their installation on the SAP score/EPC rating of the property.

¹⁵² Energy savings delivered from the measures installed are subject to revision based on further evidence from NEED on the impact of insulation measures and boiler upgrades in E and F-rated EPC properties. This evidence should be available in time for the final IA.

¹⁵³ The value of ECO available for each tonne of CO2 abated is provided by the Green Deal Household Model.

- iv. Determine which measure(s) the property needs to install to get to an E rating, or whether it is not possible to get to an E rating (i.e. by installing all measures)
- v. Assess cumulative packages of measures to see the furthest point that the home can get to within the Golden Rule for a Green Deal Finance Plan¹⁵⁴.

Compliance and Take-up/Installation

287. In order to model the take-up rate of packages, a trajectory of exposure of PRS F&G homes to the PRS Regulations is assumed. The trajectory in the preferred policy option is based on:

- i. A 2018 start to the Regulations, with exposure/take-up beginning in 2014 and reaching 90% of the current F&G PRS stock by 2020.
- ii. The composition of compliance/take-up in each year being representative of the composition of the starting PRS F&G stock.
- iii. Full compliance of those exposed to, and covered by, the Regulations each year is assumed. How they comply depends on the characteristics of the house archetype: each archetype falls into one of three categories and all homes of the same archetype are assumed to take the same action (including installing the same package of measures at the same costs, savings, etc.)
- iv. A home installing all measures within the largest package that meets the Golden Rule / Green Deal Finance Plan that achieves an EPC E rating, or as close as possible to that rating if they cannot get to E.
- v. Households for whom no improvements meet the Golden Rule do not take any action.

Counterfactual

288. The profile of take up in the counterfactual has been determined from modelling in the Green Deal Household Model (GDHM). ECO is included within the counterfactual until 2022. After 2022 when no ECO support is offered, fewer properties are assumed to make energy efficiency improvements, with the rate of uptake derived by removing the impact of ECO for the period to 2022 linearly extrapolated to 2070.

289. For the counterfactual stock that would have made energy efficiency improvements after 2022, the PRS the regulations will bring forward their decision to make such improvements. Accordingly, the full stream of benefits associated with installations after 2022 cannot be attributed to the Regulations specifically. It has been assumed that the counterfactual stock would realise a stream of benefits for a period of 20 years following installation of energy efficiency measures. For those installations that occur in the period 2023-2042, the modelling assumes an increasing attribution of the impact of the Regulation e.g. for those that would have installed in 2023 in the counterfactual, the Regulations will have only brought forward the installation by one year; installation in 2024 is assumed to be brought forward by two years, and so on. After 2042 we assume that the stream of benefits is fully attributable to the regulations.

Model Limitations

290. The current version of the model has a number of simplifications that will be improved upon for the final Impact Assessment. These include:

¹⁵⁴ The package of measures required to get to an E. It assumes that households stop at the first measure that will get them to this point, so D and above ratings are only achieved if the last measure takes them from an F to a D or better.

- i. Constant/fixed prices: costs are fixed throughout the life of the Regulations at their 2014 levels. Energy prices at which households make a decision on whether they meet the Golden Rule are fixed at DECC's projected values for 2018; prices used to value energy benefits in the CBA table relate to each year the benefits are delivered.
- ii. Assessing cumulative packages in order of measures: the merit order of measures is pre-determined within the model according to the list presented on an EPC certificate. This does not represent all possible combinations of packages to see which is the most cost-effective. For example, if a home could install a combination of 4 measures in the first part of the list to get an E or install SWI to get to an E, the model will always choose the combination of 4 measures, even if the SWI option is actually more cost-effective.
- iii. The choice function to determine whether a package meets the Golden Rule uses a lifetime of credit for each measure set to the minimum of the lifetime of the measure or 25 years. This simplification means that some of the possible funding options that achieve a higher level of headroom will be foregone, so take-up is lower than if these finance packages were optimised to meet individual circumstances. The finance costs presented in the CBA tables in Sections 8 and 9 assume an average credit period of 15 years across all packages of measures.
- iv. The aggregate uptake of measures does not vary between different policy options, only the year in which measures are installed. This is due to limitations in the counterfactual, which is based on the uptake of loft, cavity and solid wall insulation, but cannot allocate the household types to which these measures are installed. Therefore, only the numbers of households installing measures and the energy savings they deliver is included in the counterfactual.

Energy Efficiency Measures

291. The energy efficiency measures included in the model are a consolidated list of those that could potentially be recommended on a domestic EPC. The model orders measures in the central scenario to follow as closely as possible the SAP methodology. It presents measures in the following merit order:

1. Loft insulation
2. Cavity wall insulation
3. Hot water cylinder insulation
4. Draught proofing
5. Low energy lights
6. Cylinder thermostat
7. Heating controls
8. Upgrade to condensing gas boiler
9. New/replacement storage heaters
10. Replacement warm air unit
11. Solar water heating
12. Double/secondary glazing
13. Solid wall insulation
14. Floor insulation
15. High performance external doors
16. Condensing oil boiler

Annex F - The Non-Domestic Private Rental Sector Model

Model Overview

292. The Non-Domestic PRS (ND PRS) model estimates the uptake of cost-effective energy efficiency measures throughout the non-domestic private rental sector. It defines a mix of premises typologies within the non-domestic PRS and allocates cost-effective measures to these different premises, based on a combination of EPC recommendations for those premises and data from a variety of sources.

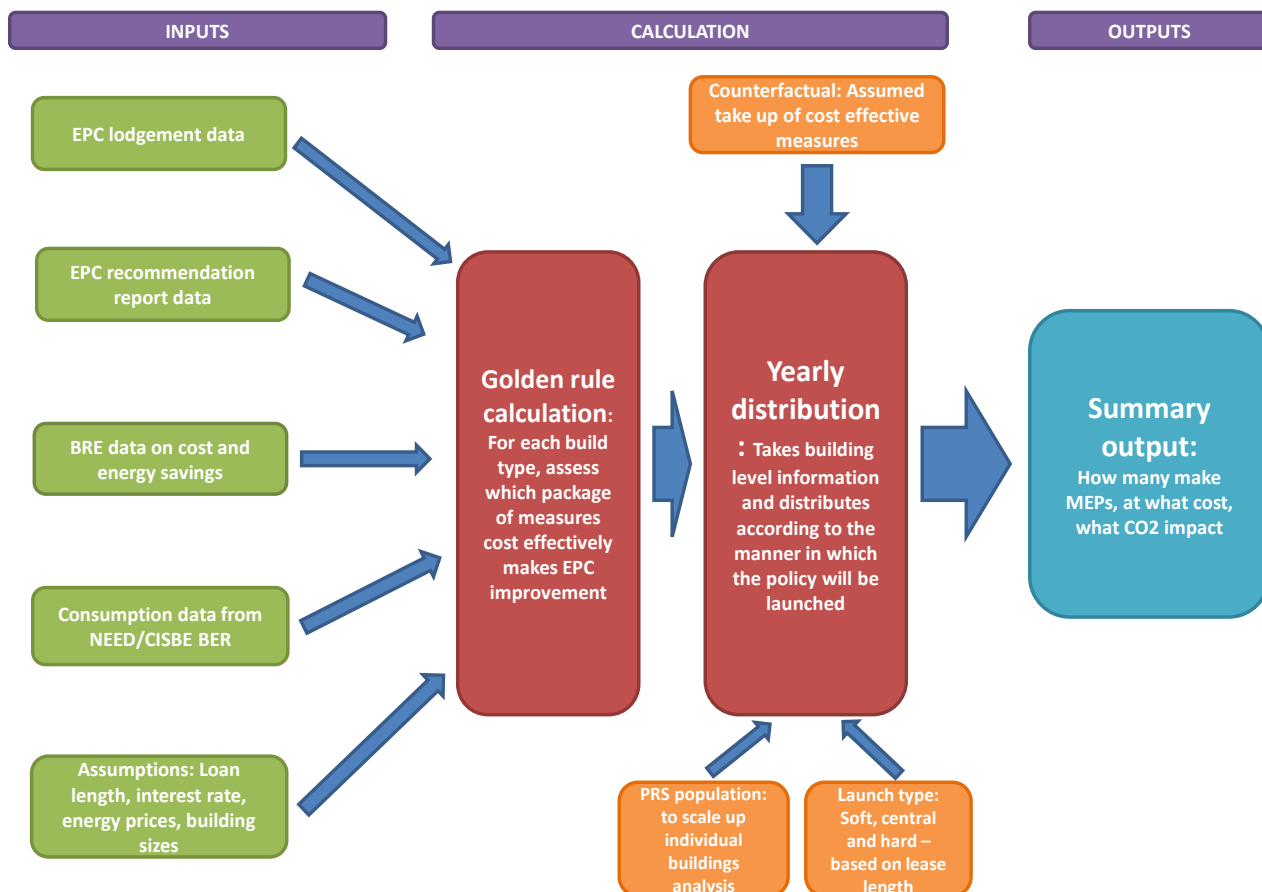
293. The model contains the following key steps in its construction:

- i. EPC data: non-domestic EPC data –containing premises’ SBEM¹⁵⁵ ratings is used to provide information on a building’s use, its floor area and the recommended measures that could be installed to improve its energy efficiency (and the speed of payback of such measures). A potential EPC rating is not available within non-domestic EPCs;
- ii. Energy use: estimates for buildings’ energy use are calculated based on Chartered Institute of Building Services Engineers (CIBSE)¹⁵⁶ energy benchmark analysis and the EPCs’ Building Emissions Rate (BER);
- iii. Typology: premises are split into different typologies based on their use, their current SBEM rating, their size and the package of recommended measures;
- iv. Cost information: BRE analysis provides information on the cost and/or energy saving potential of the recommended measures;
- v. Potential: based on costs and energy saving potential of the recommended measures, the potential improvement for each premises’ group that meets the Golden Rule is determined, along with the amount of energy likely to be saved;
- vi. New EPC: a proportionate improvement on kWh energy consumption is applied to the EPC rating to determine the new EPC for those premises in the different groups that undertake energy efficiency measures; and
- vii. Regulatory costs: the likely costs of PRS Regulations and their timing are calculated. This is based on lease length information of how quickly new tenancies would trigger improvement before a regulatory back-stop.

294. The diagram below illustrates how this methodology generates the overall impact of the proposed Regulations for ‘F’ and ‘G’ rated non-domestic hereditaments.

¹⁵⁵ SBEM: Simplified Building Energy Model – A software tool developed by BRE (The Building Research Establishment) that provides an analysis of a building’s energy consumption. It is used for non-domestic buildings. The SBEM rating is used to determine the premises’ EPC rating. A minority of properties will use dynamic simulation rather than SBEM.

¹⁵⁶ For more details, see www.cibse.org.



Non-domestic Stock

295. The ND PRS model assumes that the distribution of building characteristics across non-domestic building types is the same between PRS and non-PRS. Figure 3 in Section 1 shows the distribution of EPC data on all non-domestic properties, which is applied to the PRS stock.

296. The EPC distribution data is combined above with the 2013 BPF/IPD property data report which found that 66% of all commercial properties are rented. Annex **Table 1** shows how the model distributes these hereditaments across different uses.

Annex Table 1: Non-Domestic F and G rated premises

Build type	EPC count	National (all)	National (PRS)
Community/day centre	1,247	5,428	3,583
Education buildings	1,307	5,690	3,755
Health care buildings	3,558	15,489	10,224
Hotel	1,790	7,792	5,143
General industrial buildings	6,016	26,189	17,285
Office	46,930	204,295	134,836
Others	290	1,262	833
Restaurant and drinking establishment	18,733	81,548	53,823
Retail and financial services	46,663	203,132	134,067
Residential institutions	856	3,726	2,460
Sports and leisure	1,221	5,315	3,506
Transport terminals	92	400	266
Warehouse and storage	19,948	86,837	57,313
Total	148,651	635,801	419,633

Aggregating data

297. The EPC lodgements are grouped into four characteristics: build type, size, current EPC and main heating fuel. These characteristics form the basis of analysis within the ND PRS model, which splits premises into 351 distinct types: 13 main building types split into three sizes (small, medium and large) and three fuel types (gas, electric and oil). These types cover over 96 % of all EPC registered buildings, before a final split into three current EPC ratings ('G', 'F' or 'E').

Potential EPC calculation

298. The building emissions rate of each EPC (a value included in each lodgement) is used to approximate the current energy use for each building archetype. This, combined with the estimated energy savings from the measures taken up, provides a figure for the potential EPC value for the premises after the energy efficiency measure(s) has been applied.

Recommended measures

299. For each of the EPC lodgements, there is an equivalent EPC recommendation report which categorises the list of available measures that would improve the energy efficiency of the building. The type of measures recommended varies by the property types when these are grouped to the level described above (physical activity, size, main heating fuel and current EPC). However, we construct a 'typical' suite of recommended measures based on a frequency count of the most popular packages recommended for each aggregated build type.

300. This analysis creates 63 possible permutations of packaged measures. It then determines the most cost-effective way in which an 'E' rating is achieved and selects the chosen package of measures required to be installed.

301. Most EPCs recommend lighting measures with an assumed five year lifetime. When bundled with cost-effective Green Deal packages (within the model), this would limit the lifetime of the plan to five years. This makes it less likely that higher cost, longer life measures are to be included in a package and meet the Golden Rule. This is because the total credit period of repayment cannot exceed the life of the measures to which it is paying off. A model adjustment was made to assume that all those with lighting measures will reinstall after five years. This has the effect of doubling the costs of lighting (in net terms), but allows a greater number of other measures to be meet the Golden Rule on a 10 year plan.

Costing of typical measures

302. Cost estimates are based on external advice from BRE. BRE categorises the cost estimates and energy saving potential from 32 commonly recommended energy efficiency measures, across the 13 major build types specified above.

Energy savings from measures and new EPC rating

303. The model determines the impact of the chosen package of measures in the following way. The chosen package of measures deemed to be cost-effective, and in particular meeting the Golden Rule, will deliver a reduction in the original KWh energy use of each aggregated build type. This proportionate reduction in energy use is used as a direct proxy indicator to suggest the same proportionate improvement on EPC classification, so that a 30% reduction in KWh energy use creates a 30 % improvement in the SBEM classification score feeding into a new EPC rating.

304. In some cases, this methodology creates very high reductions to KWh energy use in our model. This could be down to one or both of the following factors:

- The model underestimates the true original energy use of certain buildings
- The estimated kWh improvements of certain measures are optimistic

305.To overcome this discrepancy, the model contains a maximum improvement ratio of 63 % so that any package of measures can only improve the SBEM value by a maximum of 63 %. This value has been determined by considering the average kWh improvement across each build type that would occur if all six recommended measures were installed.

Analytical Assumptions

Green Deal mechanism

306.The ND PRS model has been built to replicate how Green Deal credit is currently offered in the domestic sector. Dependant on the businesses' access to capital, energy efficiency measures can be financed in a variety of ways. Businesses will search for a competitive repayment interest rate, or consider self-financing the cost of measures upfront. For the purpose of our modelling, however, the assumed repayment offer in the non-domestic sector will replicate the current Green Deal finance mechanism. This will provide a useful proxy indicator for the cost-effectiveness of each package of energy efficiency measures that is considered.

Interest rate and charges

307.The assumed interest rate within the model is fixed at 6.96%. This is consistent with the current interest rate offered by the Green Deal Finance Company (GDFC) for the domestic sector. Further charges assumed include an upfront fee of £63 to set up the credit mechanism, and a further annual £20 administrative charge on the credit. These assumptions are consistent with the current charges required by GDFC and the assumptions used in the GDHM and DEPP modelling. These cost assumptions are likely to result in a conservative estimate of costs, as some non-domestic landlords could have access to lower cost finance without the Green Deal finance upfront and annual charges.

Compliance

308.The ND PRS models two types of compliance: compliance with an EPC, and compliance with the PRS Regulations themselves. For the purpose of modelling (and consistent with all other modelling in this IA), 100 % compliance is assumed throughout. That is, in the central scenario where all landlords who become exposed to the Regulations from 2018 (when sitting tenants move out and a new one is tenancy is to begin) all will comply with the Regulations unless they are exempt. It has been assumed that 10% of landlords will be exempt, as they own a building with some form of restriction.

Constant pricing

309.The installation costs provided by BRE are held constant in 2013 prices, while energy prices for 2018 (in 2013 prices) are used to calculate the Golden Rule. The entire ND PRS model provides a snap shot consideration of the non-domestic sector, facing current energy prices and installation costs. Currently, the policy will require proportions of the stock to comply in later years – however, the model explicitly assumes that those buildings will face the same installation costs and energy prices i.e. that the relationship between installation costs and energy prices is constant.

Non-domestic lease lengths

310.According to the British Property Foundation¹⁵⁷, the average length of new leases has been falling, and is currently considered to be on average 4.8 years in the commercial sector. Further evidence on lease lengths

¹⁵⁷ 2013 report http://www.bpf.org.uk/en/files/reita_files/property_data/BPF_Property_Data_booklet_2013_spreads_web.pdf

from the BPF/IPD Annual Lease Review¹⁵⁸ shows the distribution of lease lengths (see table below). This distribution forms the basis of the scenario modelling to determine the speed of take-up in the different policy options.

Annex Table 2: Non Domestic PRS Lease Lengths

Lease length	Rent-weighted distribution
1-5 years	44.0%
6-10 years	26.5%
11-15 years	11.0%
16-20 years	4.5%
21+	14.0%

Build types

311. All EPC data is compressed into identifying circa 350 representative buildings, each with unique characteristics based around main fuel use, current EPC rating, size and building use. Each building has a size based on the median of all observed lodgements pertaining to that particular characteristic, alongside a median asset rating, and energy consumption level. The model assumes that all buildings with this unique suite of characteristics (so, a small gas fuelled 'G' rated office) will benefit equally from the package of measures that is selected by the model.

¹⁵⁸ 2012 report http://www.bpf.org.uk/en/files/bpf_documents/commercial/BPF_IPD_Annual_Lease_Review_2012.pdf

Annex G – Additional PRS Modelling Results

312. The estimated uptake of measures under the three policy options in the non-domestic sector is shown in the table below. There is relatively little variation in the ordering of uptake across the three policy options, with the main difference being the *scale* of the difference between the options. This reflects differences in the remaining cost-effective potential under the different options by the time the energy efficiency improvements are made.

313. We estimate that the highest uptake of measures is under Option 3, and lowest under Option 2. This is because the hard start under Option 3 captures more buildings that would have increased their energy efficiency in the absence of the Regulations.

314. Current modelling limitations mean that the uptake of measures do not differ between the options in the domestic PRS. We intend to address this modelling limitation for the final PRS Regulations IA.

Annex Table 3 – Uptake of Measures in the Non-Domestic PRS, by Policy Option

Measure description	Policy Option 1 (Soft Start with Regulatory Backstop)	Policy Option 2 (Soft Start without Regulatory Backstop)	Policy Option 3 (Hard Start)
<i>Replacing heating boiler plant with a condensing type.</i>	109,126	104,623	133,502
<i>Introduce HF (high frequency) ballasts for fluorescent tubes.</i>	67,605	65,170	82,998
<i>Air source heat pump.</i>	34,010	31,850	38,904
<i>Cavity wall insulation.</i>	28,011	26,789	33,629
<i>Replacing tungsten GLS lamps with CFLs</i>	28,094	27,288	34,581
<i>Replacing T8 lamps with retrofit T5 conversion kit.</i>	31,637	30,429	38,879
<i>Installation of secondary glazing</i>	11,965	11,767	15,773
<i>Other</i>	20,736	19,824	25,816
Total number of measures installed	331,184	317,740	404,082

315. Jobs supported as a result of the Regulations are shown in Annex Tables 4-5, below. In the non-domestic PRS, the hard start leads to more jobs sustained as a result of the Regulations, due to more landlords making energy efficiency improvements earlier than they would have in the absence of the Regulations. In the

domestic PRS, the number of jobs supported does not vary between the policy options, due to the modelling limitations outlined in Annex E.

316. The method for estimation of jobs supported through the PRS regulations is the same as that previously used in the Green Deal/ECO final Impact Assessment. The Construction Skills (the Sector Skills Council for construction) estimated a labour to capital spending ratio that was compared to the total estimated capital spending in the sector. The ratio of job to capital spending is 32.6 jobs per £1m output. Accordingly, for the domestic sector (for example) an undiscounted installation spend of around £260m would lead to around 8,400 jobs supported.

Annex Table 4 Non-domestic sector: Jobs supported

Scenario	Total	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Policy option 1	33,100	3,800	3,800	3,800	3,800	3,800	2,200	2,100	9,800	0	0	0	0	0	0	0
Policy option 2	30,100	3,800	3,800	3,800	3,800	3,800	2,200	2,100	2,000	1800	1400	500	500	500	100	0
Policy option 3	37,000	11,500	11,500	12,800	1,200	0	0	0	0	0	0	0	0	0	0	0

Annex Table 5 Domestic sector: Jobs supported

Scenario	Total	2016	2017	2018	2019	2020	2021	2022
Policy option 1	8,400	850	1,400	3,100	1,650	1,400	0	0
Policy option 2	8,400	200	300	3,150	1,700	1,650	1,300	150
Policy option 3	8,400	1,786	2,802	3,818	0	0	0	0

317. The tables below show the carbon savings under the alternative policy options. Carbon savings are larger in the non-domestic sector because landlords (who would have made energy efficiency improvements in the absence of the Regulations) are required to act earlier than what they would have done under the hard start (under Option 3) or the regulatory backstop (under option 1). Modelling limitations mean that the carbon savings in the domestic sector do not vary between the policy options. We will address this modelling limitation for the final PRS IA.

Annex Table 6 Domestic and non-domestic carbon savings – Option 1

MtCo ₂		CB 2 (2013-17)	CB 3 (2018-22)	CB 4 (2023 – 2027)	Total (2013-2070)
Domestic	<i>Traded</i>	0.08	0.89	0.98	2.89
	<i>Non-Traded</i>	0.00	0.04	0.04	0.15
Non-Domestic	<i>Traded</i>	0.22	1.72	2.97	8.16
	<i>Non-Traded</i>	0.08	0.66	0.94	2.78

Annex Table 7 Domestic and non-domestic carbon savings – Option 2

MtCo ₂		CB 2 (2013-17)	CB 3 (2018-22)	CB 4 (2023 – 2027)	Total (2013-2070)
Domestic	<i>Traded</i>	0.02	0.77	0.99	2.89
	<i>Non-Traded</i>	0.00	0.04	0.05	0.15
Non-Domestic	<i>Traded</i>	0.22	1.72	2.56	7.54
	<i>Non-Traded</i>	0.08	0.66	0.88	2.63

Annex Table 8 Domestic and non-domestic Carbon Savings – Option 3

MtCo₂		CB 2 (2013-17)	CB 3 (2018-22)	CB 4 (2023 – 2027)	Total (2013-2070)
Domestic	<i>Traded</i>	0.16	1.00	0.96	2.89
	<i>Non-Traded</i>	0.01	0.05	0.04	0.15
Non-Domestic	<i>Traded</i>	0.66	3.46	3.19	9.21
	<i>Non-Traded</i>	0.26	1.18	1.19	3.48

Annex H – Justice Impact

In brief, what is your proposal?

318. The following information relates to the compliance and appeals process for the Private Rented Sector Regulations for which there are three parts including for the domestic private rented sector the provision for a tenant to reasonably request consent for energy efficiency measures from their landlord and also in both the domestic and non-domestic private rented sectors for the introduction of a minimum energy performance standard.

319. To use the First Tier Tribunal for a ruling of:

- i. Non-compliance by the landlord of a tenant request to consent for energy efficiency improvements.

320. Also, to use the First Tier Tribunal for appeals against the following:

321. Under the tenants 'right to request' regulations -

- i. Decision by a tribunal about possible non-compliance of a tenant request consent for energy efficiency measures; and

322. Under the domestic minimum standards regulations -

- i. civil penalties imposed by local authorities for non-compliance of the required minimum energy efficiency standard or for the provision of false information in connection with compliance of the regulations; and

323. Under the non-domestic minimum standard regulations –

- i. civil penalties imposed by a local weights and measures authority for non-compliance of the required minimum energy efficiency standard or for the provision of false information in connection with compliance of the regulations.

What is your proposal intending to achieve, over what geographical region (England, England and Wales), and in what timescale?

324. To provide rulings in England and Wales for non compliance of the tenant request consent for energy efficiency measures and to provide a right of appeal against any tribunal ruling. The tenant 'right to request' regulations will be introduced from April 2016.

325. To provide a right of appeal in England & Wales against civil penalties imposed by the local authorities or local weights and measures authorities for non-compliance with the domestic or non-domestic minimum energy efficiency regulations. The minimum standard regulations for both the domestic and non-domestic sectors will be introduced from April 2018.

What public commitments have been given and to whom?

326. The Energy Act 2011 provides a duty on the Secretary of State to introduce tenant 'right to request' regulations no later than April 2016 and minimum standard regulations for the domestic and non-domestic minimum standard regulations to be introduced no later than April 2018. There is commitment to go out to consultation on the regulations in 2014.

What are the options under consideration?

327. To include provision for securing compliance of the requirements imposed on landlords under the tenant 'right to request' regulations through a court or tribunal. Also to provide a right of appeal for all the regulations to a court or tribunal. Appeals will be against decisions imposed by a court or tribunal for the tenant 'right to request' regulations; against civil penalties imposed by local authorities for the domestic

minimum standard regulations; and against civil penalties imposed by local weights and measures authorities for the non-domestic minimum standard regulations.

How does the proposal change what happens now? Who will be affected and in what numbers?

328. The proposed tenants 'right to request' and minimum standards regulations are a new approach to improving the energy efficiency of properties in the private rented sector. Energy efficiency improvements are currently carried out in the private rented sector on a voluntary basis. The regulations will mandate energy efficiency improvements for the most energy inefficient properties in the sector. The Energy Act 2011 provides a duty on the Secretary of State to bring in secondary legislation to provide tenants with a right to request consent for energy efficiency improvements no later than April 2016 and to prohibit the least energy efficient properties from let until they are improved to a specified level no later than April 2018.
329. About 18% of all dwellings in England and Wales are in the private rented sector and approximately 11% of these have an Energy Performance Certificate (EPC) of F or G, the most energy inefficient ratings. The current expectation is that these properties will be below the minimum standard that is likely to be set at an EPC rating E and therefore will be captured by the minimum standard regulations. The private rented sector also has a relatively high level of fuel poverty with 21% of private rented sector households living in fuel poverty. It is estimated that about 430,000 properties in the private rented sector are in EPC bands of F and G. Of these properties, compliance with the minimum standard regulations will only be required where there is an Energy Performance Certificate (EPC) for the building.
330. Under existing regulation, an EPC is only required when a property is let or sold. This has only been a requirement in England and Wales since October 2008. A proportion of properties in the private rented sector will also automatically be exempt from the minimum standard regulations including listed buildings. Therefore only a proportion of F and G rated properties in the private rented sector will have to comply with the regulations immediately when the regulations are introduced in 2018.
331. There are also temporary exemptions which will apply to the regulations such as consent being required for any energy efficiency works to be carried out. Without consent the property will not need to comply with the regulations for a set period of time. In addition, the regulations are linked, particularly for the domestic sector, with the existing government Green Deal scheme that was launched in January 2013.
332. The Green Deal allows building owners to improve their properties through the issue of a loan attached to the electricity meter, which is repaid via a charge on the electricity bill by the first improver and thereafter by subsequent bill payers following each change of building occupancy, whether the building is rented or sold. Under the minimum standard regulations a property will only have to be improved to meet the minimum standard where this can be achieved by installing measures under the Green Deal. Properties that are rated F or G but have had all possible measures installed under the Green Deal but have not reached the minimum standard will be in compliance with the regulations.
333. In cases where there are permanent or temporary exemptions from the regulations proof will have to be provided to show that the property is in compliance with the regulations. A decision on compliance will be made by the local authority and a penalty issued for non-compliance. The right to appeal under the regulations will be against penalties imposed by local authority or in relation to false proof being provided to show compliance of the regulations.
334. Under the tenant 'right to request' Regulations, any tenant in one of the 4.2 million properties in the private rented sector has the right to request consent for energy efficient measures from their landlord. There is currently no requirement for a landlord to respond to a reasonable request from tenants for such improvements. However, we anticipate that the number of tenants that will exercise these new rights may be very low. In these cases only where there is a dispute relating to the request consent for energy efficiency improvements and the associated landlord response that one of the parties may take the dispute to the tribunal. Again we anticipate the number of disputes being taken to the tribunal will be very low.

Criminal Offences and Civil Penalties and Sanctions

Are you creating new civil sanctions, fixed penalties or civil orders with criminal sanctions or creating or amending criminal offences?

335. We intend that the local authorities will have the ability to impose civil penalties for the domestic minimum standard regulations and for local weights and measures authorities to impose civil penalties for the non-domestic regulations. Both the Regulatory Enforcement and Sanction Act 2008 and the Green Deal provide useful frameworks that we intend to use as a starting point to determine the level of civil penalties issues. The Energy Act 2011 stipulates that the maximum penalty for non-compliance of the minimum standard regulations in the domestic sector is £5,000.

Please provide details of the relevant legislation (where appropriate) and confirm whether the creation or amendment to criminal offense and penalties has been agreed with MoJ.

336. The private rented sector regulations will create new civil sanctions to be imposed by local authorities in relation to the domestic minimum standard regulations and local weights and measures authorities in relation to the non-domestic minimum standard regulations. These are provided for by the Energy Act 2011 in principle as stated below.

337. A tribunal or court will be used for the following under the private rented sector regulations:

- a. For a ruling of non-compliance by the landlord of a tenant request consent for energy efficiency improvements; and

338. For appeals against:

- a. civil penalties imposed by local authorities for non-compliance of the required domestic minimum energy efficiency standard or for the provision of false information in connection with compliance of the regulations; and
- b. civil penalties imposed by a local weights and measures authority for non-compliance of the required non-domestic minimum energy efficiency standard or for the provision of false information in connection with compliance of the regulations.

339. Further detail regarding the penalties will be provided in the secondary legislation for the private rented sector regulations within the framework given by the Energy Act.

HM Courts & Tribunals Service

Increasing Business for the Courts and Tribunals

Do you expect there to be an impact on HM Courts and Tribunals Service through the creation of or an increase in applications/ cases? Please provide an estimate.

340. It is difficult to estimate the impact on the Tribunals Service. The number of civil penalties issued under the minimum standard regulations and the number of cases requiring a ruling under the tenant "right to request" regulations and consequently the number of appeals taken to a tribunal will depend on a number of factors:

- i. The proportion of the properties in the private rented sector that have an EPC, that also have an EPC rating of F or G and do not fall under one of the exemption categories after 2018 will affect the number of properties that will have to comply with the minimum standard regulations.
- ii. The rate of compliance for EPCs will also affect the number of people having to comply with the regulations. As awareness within the sector increases that EPC are required when a property is let and sold due to the requirement to include the EPC rating when advertising a property for let or sale then compliance rate should increase.
- iii. Levels and effectiveness of enforcement by local authorities of the minimum standards regulations. We are investigating funding for local authorities for enforcement so that non-compliance can be identified and acted upon.
- iv. Awareness among tenants of their new right to request consent for energy efficiency improvements from their landlords and their willingness to approach landlords to make a request. Issues such as fears of retaliatory evictions may prevent tenants from taking action initially, however any requests that are made that may be affected by conflicts of interest between tenants and landlords may prevent a landlord complying with a tenant request.

341. Based on these factors, it seems reasonable to assume that the number of appealed rulings under the tenant 'right to request' regulations could be under one hundred per annum by 2016. However, we plan to produce guidance for the private rented sector to raise awareness and understanding of the regulations with the aim of substantially reducing the number of cases going to tribunal. In terms of the minimum standard regulations, it seems reasonable to assume that the number of appealed civil penalties may be higher and could be in the low hundreds per annum from 2018.

Would you expect fewer cases to come to HM Courts & Tribunals Service as a result of the proposal? Please provide an estimate of the number of cases.

342. As the number of EPCs increase and a greater number of properties within the private rented sector will need to comply with the minimum standard regulations we expect an initial increase in cases being taken to the tribunal in the early years after 2018. However, as the percentage of properties already in compliance with the regulations increases in subsequent years and the sector and enforcement bodies become more familiar with the requirements of the regulations then this should result in a levelling off and then a reduction in the number of cases being taken to the tribunal.

343. Similarly with the tenant 'right to request' regulations we expect an initial rise, albeit small number of cases being taken to the tribunal from 2016. However as the minimum standard regulations come into force in 2018 we anticipate the number of cases related to the tenant "right to request" should reduce.

Appeal Rights

Does your proposal create a new right of appeal or route to judicial review? If so, how will be handled (i.e. by HM Courts & Tribunals Service)?

344. Yes. The intent is to create a right of appeal against penalties imposed under the domestic and non-domestic minimum standard regulations. Also the intent is to create a right to appeal against rulings imposed against the tenant "right to request" regulations.

Do you expect to establish a new tribunal jurisdiction? If so, has this been discussed with HM Courts & Tribunals Service?

345. No, we anticipate the First Tier Tribunal could accommodate these appeals. But we will be guided by MOJ on this point.

Alternative Dispute Resolution

Has the use of alternative dispute resolution (ADR) procedures (Including mediation) been considered? If not, why not?

346. Yes. However, the Energy Act 2011 specifically states that a tribunal or court will be used for appeals against civil penalties and does not give powers for an alternative route such as an ombudsman to be used. Therefore it is proposed that in line with the primary legislation that a tribunal will be used rather than an alternative dispute resolution.

HMCTS Enforcement

Will the proposal require enforcement mechanisms for civil debts, civil sanctions or criminal penalties?

347. We anticipate that enforcement mechanisms will be required for the collection of debt incurred as a consequence of unpaid penalties.

HMCTS Procedural Rules, Sentencing and Penalty Guidelines

Do you anticipate that Court and/or Tribunal procedural rules will have to be amended? If so, when is the likely date for the changes?

348. The Energy Act 2011 provides powers to amend the Tribunal procedures. But we will be advised by MoJ whether this would be necessary. Any changes would need to be implemented in good time for the introduction of the tenant's 'right to request' regulations in 2016 and the minimum standard regulations in 2018.

Will the proposals require sentencing and/ or penalty guidelines to be amended?

349. We will be consulting on the level of civil penalties that may be appropriate. We also note that the Regulatory Enforcement and Sanctions Act that we are using as a reference framework provides for higher penalties under certain circumstances.

Legal Aid

Is your proposal likely to have an impact on the Legal Aid fund?

350. No. But we will be guided by MoJ advice on this issue.

If legal aid may be affected, will (i) criminal, or (ii) civil and family, or (iii) asylum legal aid be affected?

351. Not applicable.

If legal aid may be affected, would legal aid costs increase or be reduced (and by what margin)?

352. Not applicable.

Prisons and Offender Management Services

Will the proposals result in an increase in the number of offenders being committed to custody (including on remand) or probation (community sentences)?

353.No

Will the proposals result in an increase in the length of custodial sentences? If so, please provide details.

354.No.

Will the proposals create a new custodial sentence? If so, please provide details.

355.No.

What do you expect the impact of the proposals on probation services to be? Please give explanation/ calculations.

356.None

Summary

Who will be affected by this proposal in MoJ? (details from the information provided above)	Volumes	Type (e.g. prison place, tribunal hearing, fixed, penalty, etc)	Estimated costs (£)
Criminal Offences and Civil Penalties and Sanctions	It is difficult to estimate the impact on the tribunals but expect the number of cases requiring a ruling under the tenant "right to request" to be under one hundred per annum from 2016. This level is expected to decrease substantially as the minimum standard regulations come into force in 2018	Tribunal hearing to make rulings regarding non-compliance by a landlord in relation to a tenant request for consent for energy efficiency measures.	Start-up costs £3,000 First year running costs £35,000 Based on 50 cases per year for first two years between 2016-2018 £315,000 Total: £321,500
	It is difficult to estimate the impact on the tribunals but expect the number of appeals against civil penalties to be in the low hundreds per annum by 2018. This number will start to decrease as the number of properties in compliance with the regulations increases.	Tribunal hearing for appeals against variable civil penalties to be imposed by local authorities for domestic and non-domestic minimum energy performance standard regulations or for provision of false information in connection with non-compliance of the	Start up costs: £3,000 First year running costs £35,000 Based on 150 cases per year from 2018 until 2021 £1,575,000 Total £1,613,000

		regulations. For domestic regulations penalties may be up to £5,000.	
HM Courts & Tribunals Services	As above under civil penalties and sanctions section	As above under civil penalties and sanctions section	As above under civil penalties and sanctions section
Legal Aid	NA	NA	NA

Prisons and Offender Management Services (Only complete if maximum penalty is something other than a fine)

Offence	Maximum Penalty	No. of prosecutions brought per annum	Likely conviction rate	Likely Sentence

Annex I – Energy Saving Measures Included in the Non-Domestic PRS Model

Annex Table 9 Most commonly recommended on non-domestic EPCs

Measure type	Measure description
EPC-L5	Consider replacing T8 lamps with retrofit T5 conversion kit.
EPC-E5	Some windows have high U-values - consider installing secondary glazing.
EPC-L7	Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required.
EPC-H7	Add optimum start/stop to the heating system.
EPC-L2	Replace tungsten GLS lamps with CFLs: Payback period dependent on hours of use.
EPC-V1	Some spaces have a significant risk of overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.
EPC-H8	Add weather compensation controls to heating system.
EPC-E8	Some glazing is poorly insulated. Replace/improve glazing and/or frames.
EPC-R3	Consider installing solar water heating.
EPC-H5	Add local time control to heating system.
EPC-E4	Some walls have un-insulated cavities - introduce cavity wall insulation.
EPC-R5	Consider installing an air source heat pump.
EPC-H6	Add local temperature control to the heating system.
EPC-H2	Add time control to heating system.
EPC-W1	Install more efficient water heater.
EPC-R4	Consider installing PV.
EPC-L1	Replace 38mm diameter (T12) fluorescent tubes on failure with 26mm (T8) tubes.
EPC-H3	Consider replacing heating boiler plant with a condensing type.
EPC-L4	Replace tungsten GLS spotlights with low-voltage tungsten halogen: Payback period dependent on hours of use.
EPC-E6	Some loft spaces are poorly insulated - install/improve insulation.
EPC-H1	Consider replacing heating boiler plant with high efficiency type.
EPC-R1	Consider installing a ground source heat pump.
EPC-W2	Consider replacing HWS with point of use system.
EPC-E2	Roof is poorly insulated. Install or improve insulation of roof.

EPC-E1	Some floors are poorly insulated - introduce and/or improve insulation. Add insulation to the exposed surfaces of floors adjacent to underground, unheated spaces or exterior.
EPC-W3	Improve insulation on HWS storage.
EPC-C3	Ductwork leakage is high. Inspect and seal ductwork.
EPC-E3	Some solid walls are poorly insulated - introduce or improve internal wall insulation.
EPC-W4	Add time control to HWS secondary circulation.
EPC-L3	Replace high-pressure mercury discharge lamps with plug-in SON replacements.
EPC-L6	Replace high-pressure mercury discharge lamps with complete new lamp/gear SON (DL).
EPC-C2	Chiller efficiency is low. Consider upgrading chiller plant.