Department for
Business, Energy
& Industrial Strategy

WARM HOME DISCOUNT

Better targeted support from 2022

Consultation Stage Impact Assessment

28 June 2021

Title: Warm Home Discount (WHD) - Better target support from 2022 Consultation **IA No:** BEIS010(C)-21-EEL **RPC Reference No:** Not Applicable **Lead department or agency:** Department for Business, Energy and Industrial Strategy **Other departments or agencies:**	Impact Assessment (IA) **Date:** June 2021 **Stage:** Consultation **Source of intervention:** Domestic **Type of measure:** Secondary legislation **Contact for enquiries:** warmhomediscount@beis.gov.uk

Summary: Intervention and Options

RPC Opinion: Not Applicable

Cost of Preferred (or more likely) Option (in 2021 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status** N/A
Normal: -£510m Equity Weighted: £1,150m	N/A	N/A	

What is the problem under consideration? Why is government action or intervention necessary?

Fuel Poverty is the problem faced by households living on a low income in a home which cannot be kept warm at reasonable cost. The Warm Home Discount (WHD), currently worth ~£350m a year, provides low income and vulnerable households with an energy bill rebate. In February 2021 Government announced its decision to extend the scheme for a further year, continuing to provide support to eligible households until March 2022. Government now plans to extend the WHD scheme until 2025/26 and consult on reforms to the scheme, including the eligibility criteria, so that it better targets fuel poor households and contributes to the delivery of the fuel poverty milestone in 2025.

What are the policy objectives of the action or intervention and the intended effects?

- The Energy White Paper (published December 2020) stated that Government will extend the WHD from 2022 to 2025/26 and expand the total spending envelope. The scheme will provide energy bill rebates to approximately 3m customers at risk of fuel poverty per year and will contribute to the delivery of the fuel poverty milestone in 2025.
- Government is proposing to reform the scheme in England and Wales. In future, Government data would be used to identify low-income households with high estimated energy costs and such households would automatically receive a rebate. This IA covers England and Wales only.
- Scotland will receive apportioned funding so that they can extend their scheme. Many of the powers to make regulations for the WHD were transferred to Scottish Ministers by the Scotland Act 2016. We anticipate that Scottish Ministers will use these powers to develop a WHD scheme in Scotland.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

a. Option 0 – do nothing: WHD scheme will end after 2021/22, removing energy bill support to low income and vulnerable households.
b. **Option 1- no reform**: continue to distribute all rebates based on low-income criteria. This method achieves the lowest fuel poverty targeting rate with the current spending envelope (~37% of recipients are fuel poor).
c. **Option 2- reform**: improves the fuel poverty targeting score to ~42% whilst protecting low-income pensioners who currently receive rebates and maintaining current spending.
d. **Option 3 (preferred option)- reform with additional spending (£117m increase to the England & Wales spending envelope,** adding £5 to bills): improves the fuel poverty targeting score to ~47%, providing rebates to an additional ~450k fuel poor households compared to option 2.

Will the policy be reviewed? It will not be reviewed. **If applicable, set review date:** N/A				
Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** 0.5 Mt Co2	**Non-traded:** 1.2 Mt Co2	

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: 25 June 2021

Summary: Analysis & Evidence for Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base	PV Base	Time Period:	Net Benefit (Present Value (PV)) (£m)		
2021	**2021**	**4 years**	**Low:** -	**High:** -	**Normal NPV:** -£380m **Equity weighted:** £280m

COSTS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition)	**Total Cost** (Present Value)
Best Estimate			**Normal PV:** -£1,560m **Equity weighted PV:** -£2,160m

Description and scale of key monetised costs by 'main affected groups'

- Suppliers recoup the total value of their obligation, plus any administrative costs they incur, through raising prices. This is estimated to lead to costs to consumers of PV £1,230m, and after equity weighting, PV £1,820m. This includes supplier administrative costs of £37m.
- Increased income for rebate recipients is expected to lead to a net increase in energy consumption, which leads to additional resource costs of PV £230m.
- Those who do not receive the rebate experience a reduction of income, which leads to reduced energy consumption. Lower energy consumption reduces utility by PV £7m, and after equity weighting, PV £12m.
- The net increase in energy consumption leads to GHG emissions costs of PV £70m.
- The net increase in energy consumption leads to air quality costs of PV £19m.
- Administrative costs to Government of PV £7m.

Other key non-monetised costs by 'main affected groups'

None identified

BENEFITS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition)	**Total Benefit** (Present Value)
Best Estimate			**Normal PV:** £1,190m **Equity weighted PV:** £2,440m

Description and scale of key monetised benefits by 'main affected groups'

- The main benefits of rebates and debt write-off delivered to eligible households are split between increases in income and comfort; PV £620m and PV £430m respectively, and after equity weighting, PV £1,360m and PV £940m respectively.
- The portion of the rebate spent on energy consumption leads to an increase in comfort, which is equity weighted to reflect the greater value of an increase in temperature in colder homes.
- The portion of the rebate not spent on energy consumption is also equity weighted to reflect the greater value of a unit of income for poorer households.

Other key non-monetised benefits by 'main affected groups'

The rebate is designed to reduce instances of underheating through increased energy consumption and more comfortable indoor temperatures. This will lower households' susceptibility to cold related diseases and is therefore likely to improve social outcomes. Additionally, it may reduce cost burdens to the health service. These health benefits have not been monetised.

Key assumptions/sensitivities/risks	**Discount rate**	3.5

The main assumptions are the ways in which households are expected to respond to the scheme. Recipient households are expected to spend a portion of the rebate on increased energy consumption for heating (comfort-taking). The rest of the rebate is treated as additional income. Meanwhile, households who pay for the scheme and do not receive a rebate are expected to reduce their demand for energy.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			**Score for Business Impact Target (qualifying provisions only) £m:**
Costs: N/A	**Benefits: N/A**	**Net:** N/A	N/A

Summary: Analysis & Evidence for Policy Option 2

Description:

FULL ECONOMIC ASSESSMENT

Price Base	PV Base	Time Period:	Net Benefit (Present Value (PV)) (£m)		
2021	**2021**	**4 years**	**Low: -**	**High: -**	**Normal NPV:** -£370m **Equity weighted:** £550m

COSTS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition)	**Total Cost** (Present Value)
Best Estimate			**Normal PV:** -£1,550m **Equity weighted PV:** -£2,140m

Description and scale of key monetised costs by 'main affected groups'

- Suppliers recoup the total value of their obligation, plus any administrative costs they incur, through raising prices. This is estimated to lead to costs to consumers of PV £1,210m, and after equity weighting, PV £1,800m. This includes supplier administrative costs of £18m.
- Increased income for rebate recipients is expected to lead to a net increase in energy consumption, which leads to additional resource costs of PV £230m.
- Those who do not receive the rebate experience a reduction of income, which leads to reduced energy consumption. Lower energy consumption reduces utility by PV £6m, and after equity weighting, PV £11m.
- The net increase in energy consumption leads to GHG emissions costs of PV £70m.
- The net increase in energy consumption leads to air quality costs of PV £19m.
- Administrative costs to Government of PV £14m.

Other key non-monetised costs by 'main affected groups'

None identified

BENEFITS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition)	**Total Benefit** (Present Value)
Best Estimate			**Normal PV:** £1,190m **Equity weighted PV:** £2,690m

Description and scale of key monetised benefits by 'main affected groups'

- The main benefits of rebates and debt write-off delivered to eligible households are split between increases in income and comfort; PV £620m and PV £430m respectively, and after equity weighting, PV £1,510m and PV £1,050m respectively.
- The portion of the rebate spent on energy consumption leads to an increase in comfort, which is equity weighted to reflect the greater value of an increase in temperature in colder homes.
- The portion of the rebate not spent on energy consumption is also equity weighted to reflect the greater value of a unit of income for poorer households.

Other key non-monetised benefits by 'main affected groups'

The rebate is designed to reduce instances of underheating through increased energy consumption and more comfortable indoor temperatures. This will lower households' susceptibility to cold related diseases and is therefore likely to improve social outcomes. Additionally, it may reduce cost burdens to the health service. These health benefits have not been monetised.

Key assumptions/sensitivities/risks	**Discount rate**	3.5

The main assumptions are the ways in which households are expected to respond to the scheme. Recipient households are expected to spend a portion of the rebate on increased energy consumption for heating (comfort-taking). The rest of the rebate is treated as additional income. Meanwhile, households who pay for the scheme and do not receive a rebate are expected to reduce their demand for energy.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			**Score for Business Impact Target (qualifying provisions only) £m:**
Costs: N/A	**Benefits: N/A**	**Net: N/A**	N/A

Summary: Analysis & Evidence for Policy Option 3

Description:

FULL ECONOMIC ASSESSMENT

Price Base	PV Base	Time Period:	Net Benefit (Present Value (PV)) (£m)		
2021	**2021**	**4 years**	**Low: -**	**High: -**	**Normal NPV:** -£510m **Equity weighted:** £1,150m

COSTS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition)	**Total Cost** (Present Value)
Best Estimate			**Normal PV:** -£2,130m **Equity weighted PV:** -£2,930m

Description and scale of key monetised costs by 'main affected groups'

- Suppliers recoup the total value of their obligation, plus any administrative costs they incur, through raising prices. This is estimated to lead to costs to consumers of PV £1,640m, after equity weighting, PV £2,440m. This includes supplier administrative costs of £18m.
- Increased income for rebate recipients is expected to lead to a net increase in energy consumption, which leads to additional resource costs of PV £330m.
- Those who do not receive the rebate experience a reduction of income, which leads to reduced energy consumption. Lower energy consumption reduces utility by PV £9m, after equity weighting, PV £16m.
- The net increase in energy consumption leads to GHG emissions costs of PV £97m.
- The net increase in energy consumption leads to air quality costs of PV £27m.
- Administrative costs to Government of PV £22m.

Other key non-monetised costs by 'main affected groups'

None identified

BENEFITS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition)	**Total Benefit** (Present Value)
Best Estimate			**Normal PV:** £1,620m **Equity weighted PV:** £4,080m

Description and scale of key monetised benefits by 'main affected groups'

- The main benefits of rebates and debt write-off delivered to eligible households are split between increases in income and comfort; PV £870m and PV £600m respectively, after equity weighting, PV £2,330m and PV £1,620m respectively.
- The portion of the rebate spent on energy consumption leads to an increase in comfort, which is equity weighted to reflect the greater value of an increase in temperature in colder homes.
- The portion of the rebate not spent on energy consumption is also equity weighted to reflect the greater value of a unit of income for poorer households.

Other key non-monetised benefits by 'main affected groups'

The rebate is designed to reduce instances of underheating through increased energy consumption and more comfortable indoor temperatures. This will lower households' susceptibility to cold related diseases and is therefore likely to improve social outcomes. Additionally, it may reduce cost burdens to the health service. These health benefits have not been monetised.

Key assumptions/sensitivities/risks	**Discount rate**	3.5

The main assumptions are the ways in which households are expected to respond to the scheme. Recipient households are expected to spend a portion of the rebate on increased energy consumption for heating (comfort-taking). The rest of the rebate is treated as additional income. Meanwhile, households who pay for the scheme and do not receive a rebate are expected to reduce their demand for energy.

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			**Score for Business Impact Target (qualifying provisions only) £m:**
Costs: N/A	**Benefits:** N/A	**Net: N/A**	N/A

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1. Introduction to The Warm Home Discount

1. The Warm Home Discount scheme (hereafter WHD) was introduced in April 2011 and covers Great Britain. It succeeds a previous Voluntary Agreement between Government and the largest energy suppliers to provide household level support to reduce energy costs.

2. WHD provides direct energy bill support, in the form of a rebate on energy bills, for fuel poor, low income and vulnerable households. This means that the policy both contributes to the Government's fuel poverty objectives, but also helps to address broader distributional concerns across low income households arising from energy price rises and the impact of energy and climate change policies funded through bills.

3. The cost of WHD is met by energy suppliers with the total spending envelope set for Great Britain during the 2015 Spending Review at £320m per year, in 2015 pounds, rising with inflation.

4. In the 2019/20 scheme year the WHD provided help to more than 2.2m low income and vulnerable households in Great Britain[1]. This comprised rebates of £140 paid to around 1.1 million lower income pensioners and around an additional 1.1m low income and vulnerable customers, and a range of other support to vulnerable households. Currently, the WHD scheme has an overall expenditure target for each financial year, which is divided into 3 main subgroups. About half of annual spending is on automatic rebates to the electricity bills of low income pensioners who are in receipt of a subset of Pension Credit, known as the '**Core Group'**.

5. The level of annual Core Group expenditure is determined by the number of qualifying households each year. Customers eligible for the Core Group are identified by the Department for Work and Pensions. The remainder of the spending profile is referred to as 'Non-Core' expenditure. Each year the Secretary of State for the Department for Business, Energy and Industrial Strategy sets a minimum level of expenditure that participating suppliers are required to undertake on Non-Core activities in that scheme year. The 'Non-Core' activities are divided into two elements: the Broader Group and Industry Initiatives.

    - The '**Broader Group**' - participating suppliers provide energy bill rebates to a variety of low income and vulnerable households, mainly of working age, who are not part of the Core Group. The number of rebates delivered to the Broader Group is currently 1.1 million.

    - **Industry Initiatives** - participating suppliers are currently permitted to spend up to a collective total of £40m per year on actions to support households in fuel poverty or at risk of fuel poverty[2]. These activities include providing debt write-off, installing energy efficiency measures and offering energy saving advice or providing rebates to certain households.

6. The WHD scheme was due to expire in March 2021; however, following a consultation, Government extended the scheme for a further year, until March 2022.

7. The Energy White Paper, published in December 2020[3], announced that the Government will: i) extend the WHD to at least 2025/26; ii) increase the spending envelope from the

[1] https://www.ofgem.gov.uk/publications-and-updates/warm-home-discount-annual-report-scheme-year-9

[2] Industry initiatives are split across obligated energy suppliers according to their market share.

[3] https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future

current £350 million to £475 million (in 2020 prices) per year from 2022, so that we can reach a further 750,000 households; and iii) consult on reforms to improve the fuel poverty targeting of the scheme.

8. The proposed reformed scheme would cover England and Wales only therefore the proposals in this document are written and quantified on the assumption that they will apply to England and Wales only (unless stated otherwise).

9. The £475m (in 2020 prices) spending envelope is set for Great Britain and will be approximately £488m in 2022 prices. The UK Government proposes to apportion a fair amount of this total to Scotland. In this IA it is assumed that 9.4% (~£46m) will be allocated to Scotland[4]. The remaining budget (~£442m) funds the proposed reformed scheme in England and Wales. Many of the powers to make regulations for the WHD were transferred to Scottish Ministers by the Scotland Act 2016[5]. We anticipate that Scottish Ministers will use these powers to develop a WHD scheme in Scotland.

10. This impact assessment sets out the Government's options appraisal of the proposed reform.

[4] The average of the latest three years (2017-2019) of sub-national electricity and gas meter point data https://www.gov.uk/government/collections/sub-national-electricity-consumption-data and https://www.gov.uk/government/collections/sub-national-gas-consumption-data

[5] Further information on the Scotland Act 2016, and its implications for the WHD, is provided in the consultation document.

2. Problem under consideration

11. The WHD exists as part of the Government's aim to tackle and alleviate fuel poverty. Fuel poverty is defined in the Warm Homes and Energy Conservation Act 2000 as:

> "a person [who] is a member of a household living on a lower income in a home which cannot be kept warm at reasonable cost."

12. Fuel Poverty is a devolved matter, with separate indicators, targets and strategies adopted by each nation of the UK.

13. Sustainable Warmth (2021)[6], the updated Fuel Poverty strategy for England, announced that Government is updating the way we measure fuel poverty in England. Previously, fuel poverty was measured using the Low Income High Cost (LIHC) metric. This stipulates that a household is fuel poor if it has higher than typical energy costs and, were the household to spend that amount on energy, they would be left with a residual income below the official poverty line[7]. The new measure, Low Income Low Energy Efficiency (LILEE), finds a household to be fuel poor if it has a residual income below the poverty line (after accounting for required energy costs) and lives in a home that has an energy efficiency rating below Band C.

14. The change in measure should not make a significant difference to the way we measure fuel poverty rates of those targeted by the WHD scheme: 88% of households that were fuel poor under the LIHC measure are also considered fuel poor under LILEE. There are 3.2 million households in fuel poverty under the LILEE measure in 2019[8].

15. The LILEE measure removes the bias towards classifying households in larger properties as fuel poor and focuses more on the property's overall energy efficiency performance. Data limitations mean that the reforms outlined in this Impact Assessment cannot explicitly target households classified as 'Low Energy Efficiency'. This is because the data on household energy efficiency is limited; the Energy Performance Certificates (EPCs) are only available for 50%-60% of households in England and Wales[9]. Therefore, the *eligibility criteria* will be based on the LIHC metric. Properties with high energy costs are likely to have a low EPC rating; hence, the rebates are still intended to be targeted to those who benefit most (as measured by the LILEE metric).

16. This Impact Assessment focuses on the *impact* of WHD reforms on fuel poverty using the new LILEE metric. This is consistent with the recently published Sustainable Warmth document.

17. Scotland[10] and Wales[11] use variations of the '10%' indicator, whereby a household is considered fuel poor if they need to spend more than 10% of their net income on energy. The preferred option for WHD reform is proposed to operate in England and Wales; however, this Impact Assessment calculates fuel poverty in England using the LILEE measure and then scales the results for England & Wales. This is consistent with previous

[6] https://www.gov.uk/government/publications/sustainable-warmth-protecting-vulnerable-households-in-england

[7] The poverty line (income poverty) is defined as an equivalised disposable income of less than 60% of the national median (Section 2): https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/articles/persistentpovertyintheukandeu/2015

[8] https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2021

[9] https://www.ons.gov.uk/peoplepopulationandcommunity/housing/articles/energyefficiencyofhousinginenglandandwales/2020-09-23#coverage-of-energy-performance-certificate-data

[10] https://www.gov.scot/policies/home-energy-and-fuel-poverty/fuel-poverty/

[11] https://gov.wales/fuel-poverty-estimates-wales-2018

Impact Assessments which used England's fuel poverty measure of the day to calculate fuel poverty in England and then scaled the results for Great Britain. This process is necessary as the analysis is based on England only data (English Housing Survey and Fuel Poverty statistics); hence, fuel poverty in England is measured and then scaled up to incorporate the participating devolved nations.

Fuel poverty energy efficiency rating (FPEER)

18. A home's energy efficiency rating, as measured under the Standard Assessment Procedure (SAP)[12], records how expensive a home is to heat and light and bases its estimates on standardised assumptions for occupancy and behaviour. WHD temporarily reduces heating costs through provision of energy bill rebates. Currently, the WHD provides an electricity bill rebate of £140 to reduce the home's energy bill by £126 (£140 less the estimated policy cost of £14) and therefore reduces the fuel poverty gap[13]. Official statistics[14] measure these reductions in fuel costs using the Fuel Poverty Energy Efficiency Rating (FPEER). FPEER builds on SAP methodology as it also considers the impact of policy interventions that directly affect household energy costs (thereby adopting an approach closer to BREDEM[15]). Therefore, FPEER is relatively better than SAP at identifying fuel poor households as it considers the impact of policies, such as the WHD, on energy costs. The WHD reduces energy bills and hence it temporarily improves a household's FPEER rating.

19. The Government has a statutory target to raise as many English fuel poor homes as is reasonably practicable to a minimum of FPEER band C by the end of 2030, with milestones of band E (2020) and band D (2025). Energy efficiency improvements are the most effective way to support those facing fuel poverty in a lasting way. However, installing energy efficiency measures takes time, and currently many families are still living in a cold home. WHD provides an interim measure, while energy efficiency programmes are rolled out, by temporarily reducing the cost to heat a home through an energy bill rebate.

[12] https://www.gov.uk/guidance/standard-assessment-procedure

[13] A household's fuel poverty gap is the reduction in fuel bills it needs to move out of fuel poverty.

[14] https://www.gov.uk/government/collections/fuel-poverty-statistics

[15] https://www.bre.co.uk/page.jsp?id=3176

3. Rationale for Intervention

20. It will take time to install energy efficiency measures for low income and vulnerable households and hence Government has intervened and designed the WHD which provides temporary relief. The scheme provides energy bill rebates to low income and vulnerable households as the payments provide short-term, direct relief to eligible households and are relatively quick to deliver.

21. The existing WHD scheme is due to end when Scheme Year 11 (2021/22) concludes in March 2022. Extending and reforming the WHD scheme will enable Government to provide continued support toward vulnerable households. These benefits are discussed in greater detail below:

- **Tackling Fuel Poverty:** 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 health[16], the Hills Fuel Poverty Review[17] and recently published BEIS research[18] set out the strong body of evidence linking low temperatures to these poor health outcomes. Government has fuel poverty targets in place which seek to reduce the number of people living in a cold home over time and hence improve health outcomes. Fabric changes to fuel poor homes, such as installing insulation, would sustainably protect vulnerable households over the long term. However, it is not possible to install energy efficiency measures in all fuel poor households immediately and consequently a short term solution is necessary. The WHD provides vulnerable households with a rebate on their energy bill and hence encourages occupants to heat their homes to a warmer temperature. This reduces the number of fuel poor households and decreases the fuel poverty gap for recipients that remain fuel poor. As a result, the incidence of health problems associated with cold homes should reduce.

- **Distributional Equity:** High energy prices disproportionately affect low income households because heating is a necessity good (the demand for energy is income inelastic). Therefore, energy costs, on average, make up a relatively larger proportion of low-income households' expenditure than higher income households. This issue is exacerbated by properties with low energy efficiency, where households in the bottom four income deciles live in FPEER D-G households and must spend more on energy to heat their home.

- **Covid-19:** The negative economic impacts of the coronavirus pandemic are likely to have long-term impacts on incomes and unemployment. Affected households are likely to face the distributional equity issues laid out above. The WHD scheme would therefore continue to protect vulnerable low-income households including pensioners.

Reforming the Warm Home Discount scheme

22. The WHD was introduced for the purpose of supporting the most vulnerable by focusing support to low income pensioners, but over time our understanding and measurement of fuel poverty has changed and, according to BEIS analysis, working families with children

[16] Marmot Review Team (2011). *The Health Impacts of Cold Homes and Fuel Poverty*. Available at: http://www.instituteofhealthequity.org/resources-reports/the-health-impacts-of-cold-homes-and-fuel-poverty

[17] Hills (2011). *Fuel Poverty: The Problem and Its Measurement*. Available at: http://eprints.lse.ac.uk/39270/1/CASEreport69%28lsero%29.pdf

[18] https://www.gov.uk/government/publications/heat-energy-efficiency-smart-technology-and-health-review

are around twice as likely to be fuel poor than pensioners. Internal BEIS modelling estimates that over a third of households receiving the WHD rebate under the current scheme are fuel poor. Low income is a broad indicator of fuel poverty but is improved significantly if a high energy cost criterion (as per the high-cost methodology explained in paragraph 13) is introduced alongside low income criteria. The continuation of WHD is vital in continuing to support the fuel poverty strategy of targeting and relieving energy cost burdens on fuel poor households, particularly those who are likely to have the highest energy costs and supporting a worst first principle[19]. The worst first principle relates to low income households with poor energy efficiency ratings. These homes face high heating costs but cannot afford them nor can they afford to improve the energy performance of their home.

23. The Government has committed in Parliament to reform eligibility, improve the fuel poverty targeting of the scheme and provide automatic rebates to more households. New legal gateways were introduced in the Digital Economy Act 2017, specifically to enable data matching to help target automatic rebates to fuel poor customers. This aim was widely supported during the passage of the Bill and the Government now has an opportunity to apply high cost criteria as part of a set of reforms to coincide with extending the scheme from 2022/23 and beyond.

24. The rationale for extending the scheme is therefore to continue supporting low income and vulnerable households for a further 4 years (until 2025/26) which provides continuity and mitigates some of the adverse economic impacts of Covid-19. The proposed reforms to the scheme, effective 2022/23, will seek to ensure that rebates are provided to households which benefit most.

[19] See page 17 of the 'Sustainable Warmth: protecting vulnerable households' document: https://www.gov.uk/government/publications/sustainable-warmth-protecting-vulnerable-households-in-england

4. Policy options

25. The objectives of the WHD are to:

    - Lower the depth of fuel poverty through providing energy bill support to low income and vulnerable households who are at risk of or in fuel poverty.

    - Alleviate distributional inequity, by lowering the disproportionate impact of the cost of energy on low income vulnerable households.

26. From 2022/23 the government is proposing to reform the WHD scheme by introducing a high energy cost criterion to the broader group (which will be called 'Core Group 2'). The specific changes are listed in the description of options and reflect the preferred option of increasing the WHD budget to £442m across England and Wales from the start of the new scheme. Scotland would receive apportioned funding and we anticipate that Scottish Ministers will use the powers transferred to them by the Scotland Act 2016 to develop their own WHD scheme in Scotland; the proposed changes cannot be implemented in Scotland due to differences in data (therefore Scotland is not considered in this Impact Assessment). The key changes proposed are to:
    - Extend the scheme from April 2022 to March 2026 to help contribute to the 2025 fuel poverty milestone.
    - Increase England and Wales funding by £117m per year. The current scheme increases the average dual fuel bill by approximately £14 per year. The proposed additional spend is estimated to increase bills by a further ~£5 per year (~0.4% of the average annual dual fuel bill[20]) to ~£19 per year.
    - Increase the energy bill rebate to £150 per eligible household.
    - Reform broader group eligibility by introducing a high cost eligibility criterion.
    - A staged approach to reducing the supplier obligation threshold.

Summary of Options

Option 0 – ***do nothing***. Allow the current WHD scheme to lapse. This provides a counterfactual upon which the subsequent policy options are based.

Option 1 – ***no reform***. Extend the scheme without reform and therefore allocate all rebates based on low income criteria. This achieves the lowest fuel poverty targeting (~37% recipients in fuel poverty).

Option 2 – ***reform***. Reforming the WHD scheme targeting by introducing a 'high cost' element. Improves the fuel poverty targeting (to ~42%), while protecting low income pensioners who are current recipients and maintaining current spending.

Option 3 – ***reform with additional spending*** (preferred option). Reforming the WHD scheme targeting by introducing a 'high cost' element, alongside increasing the WHD budget by £117m (adding £5 to the average dual fuel bill). This achieves the highest fuel poverty rate of all the options (~47%) and provides support to more low income households.

27. Option 1 (no reform) would see the WHD scheme continued in its current form by extending the scheme from 2022/23 to 2025/26. All rebates would be targeted to low income households without consideration of energy costs and therefore make the least contribution to the fuel poverty milestone, with ~37% of recipients being in fuel poverty. Recipients in the broader group would continue to apply on a first come first served basis.

28. Option 2 (reform) will safeguard receipt of the rebate for the Core Group of low income pensioners and provide automatic rebates to ~900k other benefit recipients most at risk of fuel poverty. The Core Group would remain unchanged in terms of its eligibility criteria (i.e. automatic rebates provided to Pension Credit Guarantee Credit recipients) but the Broader Group would be rebranded Core Group 2 and reformed so that automatic rebates can be provided to those who are identified as low income and likely to have high energy costs.

29. Option 3 (reform with additional spending) will be as option 2 but also increase the number of Core Group 2 recipients and reduce the number of households potentially losing out from reform. A larger spending envelope would increase the cost of the policy on energy bills by £5 (from ~£14 to ~£19) for all households with obligated suppliers (i.e. ~0.4% of the average household's dual fuel bill[20]).

30. The current WHD allows energy suppliers to spend up to £40m of their non-core obligation on "Industry Initiatives" projects (~£37m spending in 2019/20[21]). This covers a range of innovative energy bill savings support targeted at low income and vulnerable households who may not get the WHD rebate as they are not on benefits. Charities supporting these industry initiatives report this is highly valuable support for the hardest to reach and is often used in conjunction with the Energy Company Obligation[22]. Improvement and innovation are encouraged as they are best aligned to future Government priorities (such as helping customers who self-disconnect). All three options set out in this impact Assessment propose a continuation of Industry Initiatives.

31. The total WHD spending envelope will be adjusted using inflation forecasts for each year of the extended scheme. We plan to estimate inflation using the latest available CPI forecasts and set the annual spending obligations in the Regulations to provide certainty around the budget across the scheme years. Industry Initiative spending would become mandatory and start at around £40m in 2022/23. In future years, all else being equal, it would then increase (or decrease) in nominal terms as the total spending envelope rises (or falls) with the CPI forecasts. However, spending on the Core Group rebates may change across years and it is proposed that Industry Initiatives spending would be used to absorb any overspending or underspending in the Core Groups. Therefore, the spending target for Industry Initiatives would be adjusted each year, as appropriate. Table 1 sets out the base obligation figures based on the latest CPI forecasts available at the time the analysis was undertaken.

Table 1: WHD proposed spending envelope for England and Wales (2022 prices)

	2022/23	2023/24	2024/25	2025/26
Option 1 (No reform)	£325m	£331m	£337m	£344m
Option 2 (Reform)	£325m	£331m	£337m	£344m
Option 3 (Reform with additional spending)	£442m	£449m	£458m	£467m
Of which Industry Initiatives under options 1 & 2[23]	£40m	£46m	£52m	£59m
Of which Industry Initiatives under option 3[24]	£40m	£47m	£56m	£65m

[20] https://www.ofgem.gov.uk/publications-and-updates/infographic-bills-prices-and-profits#Plain-text%20version%20infographic

[21] https://www.ofgem.gov.uk/publications-and-updates/warm-home-discount-annual-report-scheme-year-9

[22] https://www.ofgem.gov.uk/environmental-programmes/eco

[23] Spending on rebates for households in the Core Groups is likely to fluctuate across years as the sizes of the eligible pools change. Therefore, spending on Industry Initiatives may be adjusted to allow for overspends and underspends on rebates; by up to £10m compared to the base obligation (whose expected levels are set out in Table 1), and up to £5m for any in-year adjustment. Further explanation of this process can be found in the accompanying Consultation document.

[24] Spending on Industry Initiatives under option 3 rises by a greater amount than under options 1 & 2 as the entire (increased) spending envelope rises with inflation and the additional budget is added solely to non-core obligations.

32. The energy bill rebate will remain fixed at £150 throughout the scheme extension and reflects an increase to the current rebate of £140 to offset the additional cost of the policy (£117m or an extra ~£5 per household) and fuel price increases.

33. The policy will be delivered by energy suppliers in proportion to their share of the GB-wide market. For the 2021/22 scheme year, electricity suppliers with at least 150,000 domestic customer accounts (or who are part of a group of electricity or gas supply companies which together have 150,000 or more domestic customer accounts) are obligated to deliver Core Group rebates under the WHD. Electricity suppliers with at least 250,000 domestic customer accounts (or who are part of a group of electricity or gas supply companies which together have 250,000 or more domestic customer accounts) are obligated to deliver Broader Group rebates and Industry Initiatives under the WHD. The policy options considered propose a staged approach to reducing the supplier obligation threshold:
    i) From scheme year 2022/23 electricity suppliers with at least 50,000 customer accounts[25] (or who are part of a group of electricity or gas supply companies which together have 50,000 or more domestic customer accounts) will be obligated to participate fully in the scheme.
    ii) From scheme year 2023/24 onwards, suppliers with at least 1,000 customer accounts will be obliged to participate fully in the WHD.

[25] Where a supply of dual fuel is treated as a supply to two domestic customers.

5. Analytical approach to reform

34. As Government is proposing these reforms will be implemented to WHD recipients in England and Wales, the following analysis is representative of England and Wales only. The impacts of the different WHD policy options have been estimated using the 2017/18 English Housing Survey (EHS) and accompanying Fuel Poverty dataset. The analytical approach explains how the policy options are modelled and how this relates to scheme delivery using data matching.

Scheme Eligibility

35. The WHD is currently given to eligible low-income households in receipt of specific means-tested benefits. At present, this forms two low income groups (the Core Group and Broader Group) set out in Table 2. The Department for Work and Pensions (DWP) helps administer the WHD by matching households to the Core Group (Core Group 1), whereas eligible Broader Group households currently apply for a rebate from their energy supplier on a first-come first-served basis. Under the reform options a new Core Group 2 is proposed, that will be matched to DWP benefits data as before but also matched to Valuation Office Agency (VOA) data to identify the age, size and type of property. This information will be used to determine if the house should be categorised as high cost (explained in more detail in the next section). Figure 1 illustrates the data flows used to calculate a household's eligibility.

Table 2: WHD eligibility criteria under current and reformed scheme

	Core Group	**Broader Group[(i)]**
Current scheme low-income eligibility rules	Pension Credit Guarantee Credit (PCGC)	Income related Employment and Support Allowance[(ii)] Income based Jobseeker's Allowance[(ii)] Income Support[(ii)] Universal Credit[(ii)] Child Tax Credit[(ii)]
	Core Group 1	**Core Group 2[(iii)]**
Proposed scheme low-income eligibility rules under reform	PCGC	Income related Employment and Support Allowance Income based Jobseeker's Allowance Income Support Universal Credit Child Tax Credits[(iv)] Working Tax Credits[(iv)] Pension Credit Savings Credit (PCSC) but not PCGC
[(i)] The supplier sets the eligibility criteria for the provision of rebates, subject to Ofgem approval. However, beneficiaries must wholly or mainly be living in fuel poverty or in a fuel		

poverty risk group and the criteria must at least include persons in receipt of the benefits listed above.

(ii) Further mandatory eligibility criteria apply in addition to the base requirement to be in receipt of the relevant benefit, such as requirements to have parental responsibility for a child under 5 or to be in receipt of a particular disability, pensioner, or other element of the benefit. We do not propose to keep these additional criteria for Core Group 2.

(iii) These means-tested and income-related benefits comprise the low-income criteria. Low-income households are then subject to high energy cost criteria, explained below.

(iv) Households in receipt of these Tax Credits must be below a household income threshold, adjusted according to household composition ('equivalisation'). The detail of these thresholds will be consulted on in a later statement of eligibility.

Data matching and identifying "high energy cost"

36. WHD Core Group rebates are currently allocated automatically by data matching DWP Pension Credit Guarantee Credit (PCGC) recipients to obligated energy suppliers' customer records. Core Group spend is calculated based on successful matches and this determines the size of the Core Group, which in turn determines the budget available to the Broader Group. The Core Group and Broader Group are modelled in this analysis by identifying households within the EHS in receipt of PCGC and Broader Group eligible benefits listed in Table 2.

37. Under the reform options (options 2 and 3) a new Core Group 2 is proposed that will supersede the Broader Group. VOA data will be introduced to determine which homes should be deemed to have high expected energy costs. VOA data on floor area, type of property (e.g. flat, semi-detached, detached, etc.) and age of building will be used as the independent variables in a regression model. The regression will predict a home's **energy expenditure** based on these explanatory variables. The regression equation (detailed in the Annex) is of the following form:

Energy Expenditure is a function of: A × Age + B × Floor area + C × Property type

38. The regression predicts energy expenditure, which is a variable available in the English Housing Survey's Fuel Poverty dataset[26]. Predicted energy expenditure is calculated for households in England and Wales to identify which ones appear to be high cost. These explanatory variables are available in the VOA data for the vast majority of home in England and Wales (but not Scotland). Some of the data values in a minority of cases (less than 5%) are missing, but BEIS has developed imputation processes to estimate these values using a range of statistical techniques. The regression approach was developed in collaboration with UCL and then peer reviewed by the ONS. A more detailed explanation of the regression approach is provided in the Annex.

39. Homes will be ranked according to their modelled energy expenditure costs and matched to DWP benefits records to determine those that are low income. Of these low income households, those that sit above a "high-energy cost" threshold would form the Core Group 2. The following would determine where Government sets the "high-energy cost threshold": i) desired level of spending ii) the assumed matching success rate with energy suppliers and iii) assumptions on how many additional households may claim a rebate

[26] https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8655

through the helpline ("sweep-up" process). Separate to this consultation but close to the start of the reformed scheme, Government intends to consult on a policy statement setting out the "high energy cost threshold" and the detailed high energy cost eligibility criteria (i.e. the combinations of property age, type and floor area).

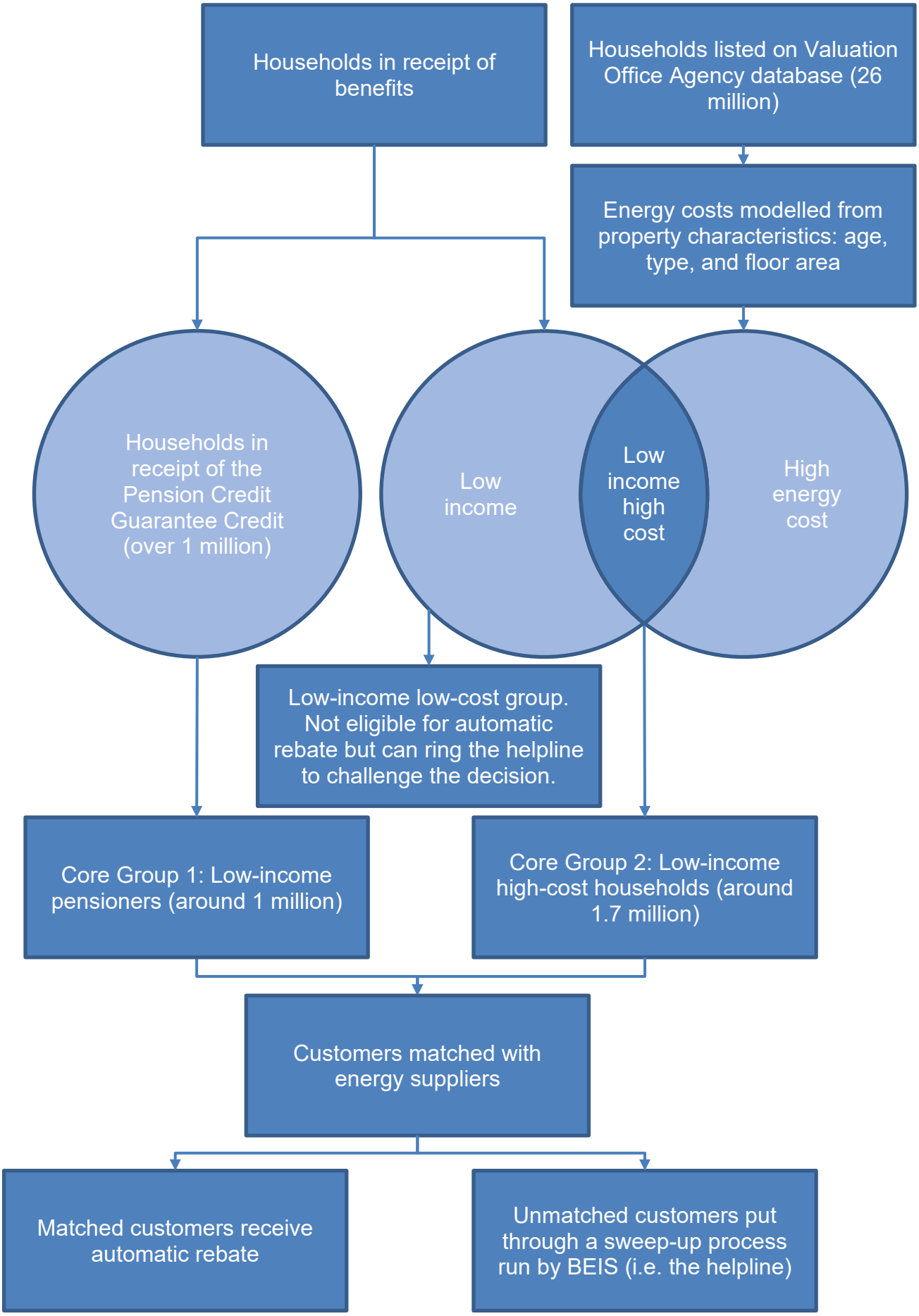
40. This high-cost threshold and high cost criteria for Core Group 2 would be set in the first year of the scheme. Government intends to keep eligibility criteria for Core Group 2 unchanged for the lifetime of the scheme and rely on the flexible Industry Initiative spending to partially balance variations. However, should there be consistently large Core Group overspends or underspends, we may change the Core Group 2 high-cost threshold. We would also intend to re-run the regression analysis each year to ensure the eligibility assessment is based on the latest available data.

41. Figure 1 below broadly shows the two elements of the proposed reformed scheme's information being matched. As described above, benefit data in the top left is used to filter households believed to be low income into the Core Groups 1 and 2. Housing characteristic data from the VOA supplements this (top right) to find those households likely to have high heating costs. Households in receipt of Pension Credit Guarantee Credit form Core Group 1. Other low-income households are ranked by heating cost and those that sit above a fuel cost threshold (determined by available budget) form the Core Group 2.

42. As explained above, the proposed reformed scheme uses VOA data on property characteristics to predict each household's energy costs. Where these data are unavailable it may be possible to impute the missing value(s) using a range of statistical methods. It is anticipated that most Core Group 1 and 2 households will be matched to energy suppliers by DWP and will receive the rebate automatically. However, some household groups may need to provide additional information so that they can receive a rebate. These households receive a letter from Government encouraging them to participate in the sweep up process[27].

[27] The 'Data matching and sweep up' section of the consultation document describes the household groups which receive letters and outlines the sweep-up process.

Figure 1: WHD proposed Core Group 1 and 2 customer flow diagram:



Spending profile

43. The budget for the WHD in England and Wales based on our preferred option (option 3) would start at £442m in 2022/23. If spending were to continue at current levels then the 2022/23 budget would be £325 million. Figure 2 shows the spending levels for the preferred option, increasing with inflation[28] during the 4-year scheme extension.

44. In the first year, Industry Initiatives is proposed to be set at £40m and spending on these activities will be deducted from the total spending envelope each year. The "base spending target" on Industry Initiatives (£40m rising ~£7-9m year on year) will be reduced (if there is an estimated overspend in the Core Groups) or increased (if there is an estimated underspend in the Core Groups)[29].

45. The size and budget of Core Group 1 will be calculated and deducted based on DWP counts and then assuming ~85% match rate to energy supplier customer accounts (see assumptions section for an explanation of the 'Core Group coverage'). What remains of the WHD budget will be allocated spend to the Core Group 2 pool. The desired Core Group 2 spend calculation for the first year of the scheme is therefore:

Core Group 2 spend = Total spending envelope – Industry Initiatives – Core Group 1 spend

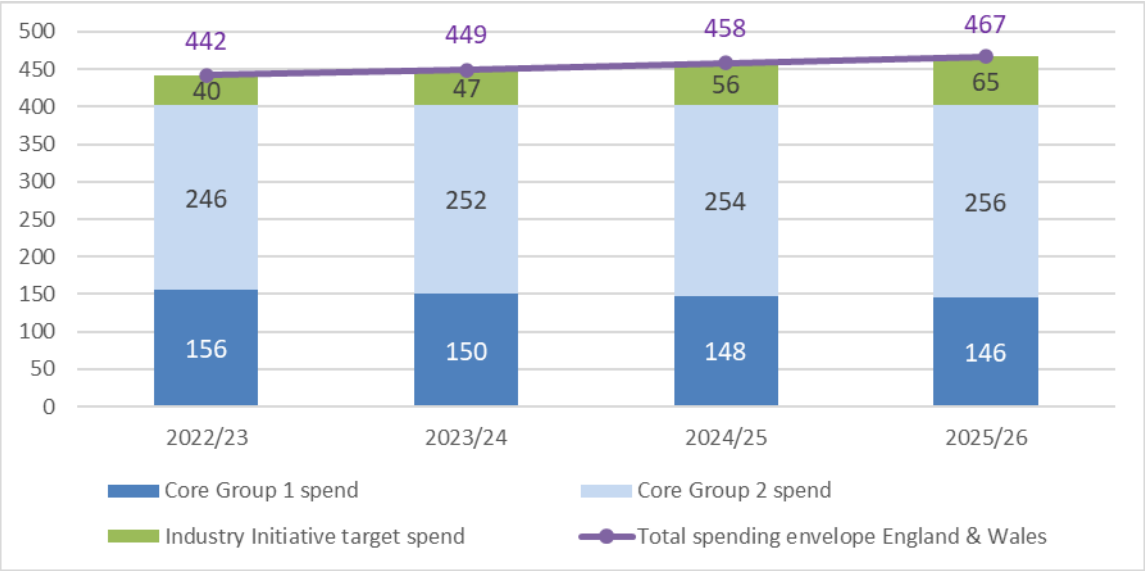
46. As outlined above, the 'high cost' threshold would be set for the first year of the reformed scheme. Government does not intend to change this threshold in subsequent scheme years so that households on the 'border' have a degree of certainty over whether they will qualify for a rebate. This means flows into and out of the low-income pool will affect the Core Group 2 pool size. Industry Initiatives spending is designed to counteract variations in Core Group spend. Suppliers are mandated to spend £40m on Industry Initiatives in 2022/23 but may spend a lower amount if spending on rebates in either Core Group is higher than expected and vice versa. If a situation arises in which Industry Initiatives are not enough to counteract significant variation in Core Group spend, the Government may consider intervening, in the first quarter of the relevant scheme year, by adjusting the high energy cost threshold to ensure the WHD budget is met. Government may decide in the first quarter of subsequent calendar years whether the high cost threshold should be changed.

47. Changes to the eligible pool between scheme years and the risks to spending levels associated with this are discussed in more detail in the Risks, Assumptions and Sensitivities section.

[28] Based on consumer price index projections from OBR, Economic and Fiscal Outlook, November 2020: Table 1.7: Inflation https://obr.uk/efo/economic-and-fiscal-outlook-november-2020/

[29] Overspending and underspending provisions are covered in more detail in the Consultation Document that this Impact Assessment accompanies.

Figure 2: Illustrative spend levels in each year of option 3, £million (reform with additional spending)



6. Impact Analysis

Impact on households

48. For the first scheme year 2022/23, Core Group 1 expenditure is estimated to be approximately £156m to support around 1 million households. Core Group 2 expenditure varies between £129m to £246m depending on the size of the scheme (options 2 or 3) supporting between 0.9m and 1.6m households.

49. The Government does not currently collect demographic information about who within the Broader Group receives the WHD rebate. This means the modelled estimates used below in Table 3 to predict current recipients in the broader group, under the no reform option 1, will be subject to a greater level of uncertainty compared to the Core Group 2 upon which data is collected. Therefore, comparison between changes in WHD recipients between option 1 (no reform) and the reform options 2 and 3, should be considered with the caveat that modelled recipients in option 1 are assumed to be representative[30] of real-life recipients.

50. Net changes in the characteristics of recipients are presented but not intra flows between them as these are subject to even greater uncertainty for the reason mentioned above. Table 3 shows the number of rebates distributed to household groups under the policy options considered. Table 4 highlights the impacts of reforming the WHD on the number of rebates each household group receives, relative to the current scheme (policy option 1). Similarly, Table 5 illustrates the change in the number of rebates given to households in receipt of specific benefits, relative to the no reform scenario.

Table 3: Number of rebates to household groups for each policy option in 2022/23 (excluding industry initiatives) in England and Wales

	Policy Option 1 No Reform	Policy Option 2 Reform	Policy Option 3 Reform with additional spending
Pensioner	800,000	830,000	880,000
Single working age without children	250,000	120,000	240,000
Single working age with children	270,000	160,000	340,000
Working age couple without children	150,000	160,000	240,000
Working age couple with children	160,000	320,000	530,000
Other working age	280,000	320,000	440,000
Of which			
PCGC recipient	1,030,000	1,030,000	1,030,000
DLA/PIP recipient[31]	710,000	340,000	500,000
Total fuel poor recipients	700,000	800,000	1,260,000
Proportion fuel poor	37%	42%	47%
Total recipients	1,900,000	1,900,000	2,680,000

Figures may not sum due to rounding.
Based on analysis using the English Housing Survey/Fuel Poverty dataset 2017/18, upscaled from England to

[30] BEIS have used the English Housing Survey to model likely recipients based on derived benefits flags.

[31] Households in receipt of the Attendance Allowance (AA) disability benefit only have not been included in the figures in this row. If AA were included together with DLA and PIP it would increase the figures by around 90,000 for each policy option. AA is a pension age disability benefit and the majority of AA recipients who receive a WHD rebate also receive PCGC (~85%) and would therefore receive a Core Group (1) WHD rebate.

England and Wales.
Fuel poor figures may not align with the fuel poverty statistics, the figures shown measure fuel poverty before WHD.
Due to the modelling methodology and the use of survey data, small changes in rebate recipients between policy options are unlikely to be significant.
Note that DLA/PIP / PCGC / fuel poor recipients are not mutually exclusive and may overlap.
Total number of DLA/PIP recipients is based on benefits survey data and may be underrepresented compared to administrative data.
Number of PCGC recipients is based on the DWP forecasts (DWP, Benefit expenditure and caseload tables 2020, https://www.gov.uk/government/publications/benefit-expenditure-and-caseload-tables-2020)
Differences in 'Pensioners' and 'PCGC recipient' are largely due to the use of survey data (where the respondent is not always the rebate recipient) and the derived classification of the 'Pensioner' household type.

Table 4: Changes in rebates to household groups compared to option 1

	Policy Option 2 Reform	Policy Option 3 Reform with additional spending
Pensioner	30,000	80,000
Single working age without children	-120,000	-4,000
Single working age with children	-120,000	70,000
Working age couple without children	5,000	90,000
Working age couple with children	160,000	370,000
Other working age	40,000	160,000

Refer to footnotes for Table 3

Table 5: Changes in rebates to households in receipt of specific benefits compared to Option 1

	Policy Option 2 Reform	Policy Option 3 Reform with additional spending
PCGC recipient	Unchanged	Unchanged
DLA/PIP recipient[32]	-370,000	-210,000

Refer to footnotes for Table 3

51. The impact of introducing high cost criteria to the Core Group 2 will improve targeting to working age couples with children in particular, compared to the current scheme. Increasing the spending envelope in option 3 is likely to benefit all socio-demographic groups, with the exception of a slight reduction in rebates for those who are single and working age, though given the modelling methodology and use of survey data this is unlikely to be a significant result. Working age couples with children see the largest benefit, with recipients estimated to increase from 160,000 to 530,000.

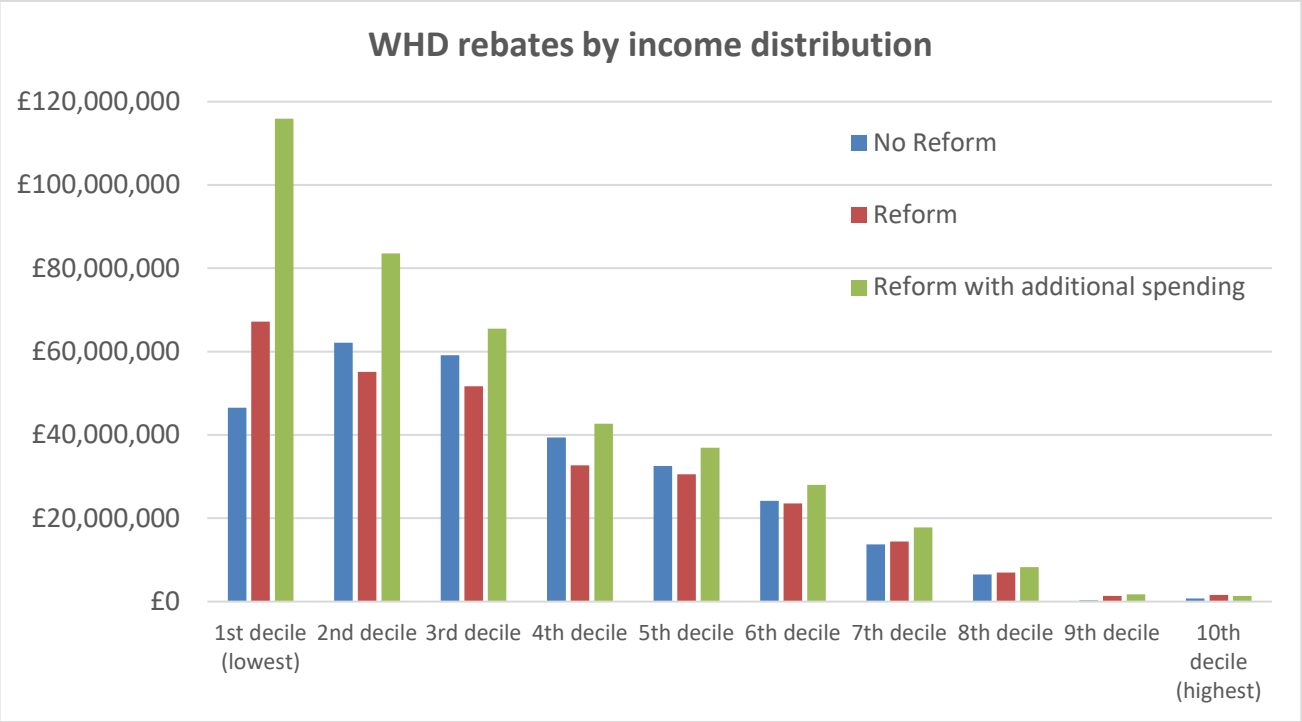
52. There are likely to be fewer DLA/PIP recipients under options 2 and 3 (-370,000 and -210,000 respectively) which is a consequence of removing disability benefit eligibility as a sub-criteria (see Table 2). This is discussed in more detail later in this section.

[32] Households in receipt of the Attendance Allowance (AA) disability benefit only have not been included in the figures in this row. If AA were included together with DLA and PIP the numbers would be very similar; the change in rebate numbers compared to the no reform option would be slightly smaller but within 10,000 of those quoted here.

53. The WHD is a redistributive policy, and therefore distributional impacts such as equity analysis attempts to evaluate energy bill rebates' distribution by income bracket. An estimate of the distribution of the eligible population across different income decile groups is shown in Figure 3 below.

54. Option 1 (no reform) is the least effective in targeting lowest income households although it does deliver the majority of rebates (59%) to bottom 3 deciles. Options 2 and 3 target 61% and 66% of rebates to the lowest 3 income decile households.

Figure 3: WHD rebate spend by recipient income distribution[33], England and Wales



Source: Analysis of English Housing Survey/Fuel Poverty dataset 2017/18, upscaled from England to England and Wales

55. The SAP methodology is used by Government to assess the energy performance of households. Building on SAP, the FPEER methodology also accounts for the impact of policy interventions which directly affect household energy costs, such as the Warm Home Discount. Government aims to improve as many fuel poor households in England as is reasonably practicable to a minimum of FPEER band C by the end of 2030[34]. Table 6 shows that under preferred option 3, approximately 860,000 households are modelled to move from FPEER D-G to FPEER A-C, 270,000 more than in the current scheme. This suggests the proposed reform with additional spending option will further reduce energy bills and can relieve high energy costs for households with low energy efficiency.

[33] Income deciles are based on equivalised income after housing costs. Disability benefits are included in income in this chart.

[34] https://www.gov.uk/government/publications/sustainable-warmth-protecting-vulnerable-households-in-england

Table 6: Changes in FPEER band for all households due to WHD rebates (England and Wales)

FPEER Band	No WHD	Change under No Reform	Change under Reform	Change under Reform with additional spending
A-B	340,000	220,000	110,000	140,000
C	8,090,000	370,000	460,000	720,000
D	12,640,000	-510,000	-460,000	-710,000
E	2,770,000	-60,000	-90,000	-110,000
F	750,000	-20,000	-20,000	-30,000
G	190,000	-6,000	-7,000	-10,000

Source: Analysis of the English Housing Survey 2017/18 and Fuel Poverty dataset 2018.

56. The reformed WHD scheme covers England and Wales but does not have a geographical focus in terms of allocating rebates, rather it intends to target low income and vulnerable households. We can only estimate the regional distribution for England but those modelled as in receipt of rebates under the different policy options is similar to the estimated regional distribution of the fuel poor population in England. For example, for the preferred option, the regions in which households receive the most rebates match the regions with the highest proportion of fuel poor homes (London and the North West). The fewest rebates go to the North East, which has the smallest share of fuel poor homes in England[35].

Impact on households in receipt of a disability benefit

57. Table 3 showed that 710,000 households containing a disability benefit (DLA/PIP) recipient are estimated to receive a rebate under the current scheme (policy option 1). Modelling suggests that this number could fall by 210,000 to 500,000 under the proposed reform (policy option 3). However, given the proposed reform will improve fuel poverty targeting by prioritising households with low income and high energy costs, we estimate that the absolute number of households in receipt of a disability benefit who are also fuel poor would be similar under the current scheme (option 1) and the proposed reform (option 3).

58. The inclusion of disability benefits as a qualifying benefit in the no reform option 1 does not always lead to improved targeting of fuel poor households since many disability benefit recipients have incomes that are comparatively higher than other benefit recipients[36]. However, in 2018 the fuel poverty rate of households with a long term illness or disability[37] was ~22%, higher than the fuel poverty rate of the overall population, which was ~16%[38].

59. Under the reform options 2 and 3, disability benefit recipients are included in the 'low income' pool if they are also in receipt of a qualifying means-tested benefit listed in Table 2. Disability benefit recipients will be treated the same as the rest of the low income pool

[35] Table 6: https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2020

[36] DLA/PIP are benefits designed to offset some of the extra costs associated with long term ill-health or disability and are not means-tested with regard to income which means DLA/PIP recipients tend to have higher incomes compared to other households in receipt of means-tested benefits.

[37] A household that contains someone with a long-term illness/disability that states their condition reduces their ability to carry out day-to-day activities. Examples of long-term illnesses/disabilities include, but are not limited to, conditions which affect vision, hearing, mobility and/or mental health.

[38] Note that fuel poor figures may not align with the published fuel poverty statistics as the figures shown measure fuel poverty before WHD.

in the Core Group 2 by having high cost criteria applied and filtered out if their estimated energy costs are below the threshold.

60. The 2017/18 EHS Fuel Poverty dataset suggests around 47% of disability benefit (DLA/PIP) recipients would be eligible for a rebate under the 'low income' criteria for WHD reform[39]. The fuel poverty rate for that group is ~44%, compared to only ~19% for those disability benefit (DLA/PIP) recipients not eligible for the reformed WHD scheme under the 'low income' criteria. Therefore, including DLA/PIP or other disability benefits as qualifying benefits in their own right is unlikely to target more low-income disabled households that are at risk of fuel poverty.

61. Households with a disability who are no longer in contention for a rebate under the proposed reform would be those in higher income deciles or living in households that are estimated to have lower relative energy costs.

62. The regression approach (outlined in section 5) for estimating energy costs is based on property characteristics and does not consider the different heating regimes of different households e.g., due to disabilities or long-term health conditions. There is some evidence to suggest households with a disability have higher heating costs than average[40] but there are not household level data available that would allow us to factor this into our analysis to target those with the highest heating costs. Although we can identify households in receipt of a disability benefit from DWP data, not all these households will necessarily incur higher heating costs. Therefore, given the relatively low fuel poverty rates of those not in receipt of qualifying benefits (see paragraph 60), targeting the whole group would not improve the fuel poverty targeting of the scheme.

63. In recognition that some people with disabilities may, as a result of their disability, require more hours of heating or higher temperatures, we are proposing to introduce a safeguard for disabled households in fuel poverty under the Industry Initiatives element of the WHD scheme. More details on the specific options for this can be found in the Consultation document.

Costs and Benefits

64. The costs and benefits in this section present both normal and equity weighted Net Present Values (NPVs) of the scheme. The objective of WHD is the redistribution of income to low income households, to provide support to households who cannot afford to heat their home sufficiently. The cost of the energy bill rebate is spread across all bill payers in England and Wales who are with an obligated energy supplier (which is currently approximately 99% of the market – see section 8 for further detail). The benefits to recipients of the WHD typically go to households in lower income decile groups (see Figure 3). Equity weighting is appropriate as it quantifies higher marginal benefits of additional income to lower income groups in contrast to lower marginal reductions in utility to high income groups.

65. The equity-weighted values reflect income transfers across different income deciles arising from:

[39] Including Attendance Allowance (AA) as a disability benefit would reduce this to 39% but this does not include those eligible for a WHD rebate via the PCGC eligibility for Core Group 1. Since AA is a pension age benefit, the majority of WHD rebates going to AA recipients would be via Core Group 1.

[40] https://www.scope.org.uk/campaigns/extra-costs/out-in-the-cold/

- The equity weighted value of reduced bills affecting households in receipt of a WHD rebate (it is assumed 41%[41] of the rebate contributes to the household energy bill).
- The equity weighted value of increased income achieved from an energy bill rebate (it is assumed the remaining 59% of the rebate is used to subsidise income expenditure)
- The equity weighted value of increased bills affecting all household customers of obligated suppliers.

The distributional weightings used to calculate equity weighted NPVs are listed in Table 14.

66. Carbon emissions and air quality costs arising from changes in energy consumption are included as costs and benefits. The cost of WHD is added to households' energy bills which reduces household energy demand slightly, leading to lower energy consumption and subsequent emissions. Households in receipt of WHD are expected to increase their energy consumption leading to higher emissions.

67. The NPVs present central estimates and these are sensitive to the actual income groups who receive the WHD rebate. A sensitivity analysis of the key assumptions has been undertaken in section 9.

[41] This is known as the "Labelling Effect", see the assumptions section for more details.

Table 7: Equity weighted monetised and non-monetised costs and benefits of each option (including administrative burden)

	Description	Policy Option 1 No Reform	Policy Option 2 Reform	Policy Option 3 Reform with additional spending
Benefits	Equity weighted value of rebate (excluding the impact of the Industry Initiatives)	1,360	1,510	2,330
	Increase in equity weighted comfort taking	940	1,050	1,620
	Industry Initiatives excluding debt relief	140	140	140
	Reduction in resource, carbon and air quality costs combined due to bill increase	5	4	6
	Total benefits	**2,440**	**2,690**	**4,080**
Costs	Equity weighted value of bill increase	-1,820	-1,800	-2,440
	Of which: administrative costs to industry*	-37	-18	-26
	Reduction in utility from lower energy consumption (billpayers)	-12	-11	-16
	Resource costs	-230	-230	-330
	Carbon costs	-70	-70	-97
	Air quality costs	-19	-19	-27
	Administrative costs to Government	-7	-14	-22
	Total costs	**-2,160**	**-2,140**	**-2,930**
NPV	**Total NPV (£m)**	**280**	**550**	**1,150**

Figures may not add up due to rounding (figures are shown rounded to the nearest £m for those <£100m, otherwise to the nearest £10m).
Based on real 2021 prices, and the number of expected recipients in 2022
*Administrative costs to industry are included within the equity weighted value of bill increase

Table 8: Monetised and non-monetised costs and benefits of each option (including administrative burden) without equity weighting

	Description	Policy Option 1 No Reform	Policy Option 2 Reform	Policy Option 3 Reform with additional spending
Benefits	Value of rebate (excluding the impact of the Industry Initiatives)	620	620	870
	Increase in comfort taking	430	430	600
	Industry Initiatives excluding debt relief	140	140	140
	Reduction in resource, carbon and air quality costs combined due to bill increase	5	4	6
	Total benefits	**1,190**	**1,190**	**1,620**
Costs	Value of bill increase	-1,230	-1,210	-1,640
	Of which: administrative costs to industry*	-37	-18	-26
	Reduction in utility from lower energy consumption (billpayers)	-7	-6	-9
	Resource costs	-230	-230	-330
	Carbon costs	-70	-70	-97
	Air quality costs	-19	-19	-27
	Administrative costs to Government	-7	-14	-22
	Total costs	**-1,560**	**-1,550**	**-2,130**
NPV	**Total NPV (£m)**	**-380**	**-370**	**-510**

Figures may not add up due to rounding (figures are shown rounded to the nearest £m for those <£100m, otherwise to the nearest £10m).
Based on real 2021 prices, and the number of expected recipients in 2022
*Administrative costs to industry are included within the value of the bill increase

68. Figure 4 illustrates the extent to which income transfers flow into and out of different income deciles. WHD targets support for low income households, meaning that the policy leads to positive distributional outcomes. The positive distributional effect of the policy arises because costs are spread across bill-payers with participating suppliers, whilst the distribution of bill reductions (through WHD rebates) is heavily concentrated among lower income groups.

69. Figure 4 also shows that some rebates are delivered to households in the higher income deciles. In the absence of income data for every household in Great Britain, a set of means-tested benefits is used as a proxy to determine which households are likely to be low income and vulnerable to fuel poverty. However, some households with relatively high incomes receive some of these benefits, thereby making them eligible for the rebate. Nevertheless, the majority of rebate recipients have below median incomes.

Figure 4: Illustrative income transfer distribution arising from WHD rebates

7. Equalities Assessment

70. The Public Sector Equality Duty (the 'Duty') is a statutory requirement imposed by section 149 of the Equality Act 2010[42]. In broad terms, the Duty requires public bodies to have due regard to the need to eliminate discrimination, advance equality of opportunity and foster good relations between different people when carrying out their activities. Advancing equality of opportunity includes having due regard to the need to remove or minimise disadvantages, take steps to meet the needs of persons sharing a protected characteristic and encouraging their participation in activities where their participation is disproportionately low. The following relevant protected characteristics are set out under the Duty:

    - age
    - disability
    - gender reassignment
    - pregnancy and maternity
    - race
    - religion or belief
    - sex
    - sexual orientation

71. The government has considered whether any of the above groups might be adversely or positively impacted by this policy in different ways and this has been assessed below. Equality analysis of rebate distribution by protected characteristic is presented but limited to those characteristics captured by the English Housing Survey 2017-18 and Fuel Poverty Dataset 2018. The government will explore ways to utilise more information in the future to analyse equalities impacts (discussed in more detail in paragraph 128).

72. To represent both England and Wales in these figures, total figures have been uplifted based on the number of households in England and Wales. Due to limitations in the survey, these variables may not fully represent the true proportion of each group in the total population and in rebate-receiving groups. The tables, below, show the distribution of WHD rebates for each policy option. These figures are compared with the fuel poor population (as this is the intended target group for the policy) as well as the overall population for England and Wales.

73. Table 9 suggests that under all policy options a greater proportion of rebates will go to households where the household representative is female compared to male (a household representative is the person who responded to the survey). The ability to determine who within the household is female or male depends on who participated in the survey and therefore it is difficult to ascertain the impact of the policy options on the different genders. The statistics suggest options 2 and 3 target a greater share of male-headed households than option 1, which is a consequence of targeting more working age couples with children who have male recorded as the household representative.

[42] https://www.gov.uk/guidance/equality-act-2010-guidance

Table 9: Distribution of sex across WHD recipients and population

Sex	Policy option 1 No Reform (n=1.9m)	Policy option 2 Reform (n=1.9m)	Policy option 3 Reform with additional spending (n=2.7m)	Proportion of fuel poor households in England & Wales (n=4m)	Proportion of households in England & Wales (n=24.8m)
Male	41%	45%	46%	53%	58%
Female	59%	55%	54%	47%	42%
Defined by the given sex of the household representative					

Source: Analysis of the English Housing Survey 2017/18 and Fuel Poverty dataset 2018

74. Table 10 suggests that under the preferred option 3, the distribution of WHD rebates to ethnic groups is broadly in line with ethnic groups across the fuel poor population, with a higher proportion of white single households (and lower proportion of white couples) receiving rebates than their share of the fuel poor population. However, the distribution is more closely aligned with the overall fuel poor population than option 1.

Table 10: Distribution of ethnicity across WHD recipients and population

Household ethnicity	Policy option 1 No Reform (n=1.9m)	Policy option 2 Reform (n=1.9m)	Policy option 3 Reform with additional spending (n=2.7m)	Proportion of fuel poor households in England & Wales (n=4m)	Proportion of households in England & Wales (n=24.8m)
White single	65%	58%	56%	43%	37%
Ethnic minority single	9%	7%	7%	8%	5%
Mixed couple	1%	1%	2%	3%	3%
Ethnic minority couple	4%	9%	9%	9%	5%
White couple	22%	24%	27%	36%	50%
Where mixed couple represents a household with a white/non-white household representative with a non-white/white partner. White single/ethnic minority single represents a single householder in a property who is either of white ethnicity or a non-white ethnicity. White/ethnic minority couple relates to a household where both the representative and partner are white/non-white.					

Source: Analysis of the English Housing Survey 2017/18 and Fuel Poverty dataset 2018

75. When the data is aggregated to singles and couples (note couples will include unmarried cohabiting partners therefore is only a proxy for the married/civil partnership characteristic), Table 11 shows that a higher proportion of couples will receive the rebate under the preferred reform option 3. This is more closely aligned with the distribution of fuel poor households between single/couples, and the overall population.

Table 11: Distribution of single households and couples across WHD recipients and population

Relationship status of household representative	Policy option 1 No Reform (n=1.9m)	Policy option 2 Reform (n=1.9m)	Policy option 3 Reform with additional spending (n=2.7m)	Proportion of fuel poor households in England & Wales (n=4m)	Proportion of households in England & Wales (n=24.8m)
Single	74%	66%	63%	52%	42%
Couple	26%	34%	37%	48%	58%

Source: Analysis of the English Housing Survey 2017/18 and Fuel Poverty dataset 2018

76. Table 12 shows there are a greater proportion of WHD recipient households with a disabled person(s) than the fuel poor population and the overall population. However, as many disabled households are not fuel poor, a large proportion of households who previously received the WHD rebate may become ineligible as a result of the reform which includes more emphasis on high energy costs. This is reflected in the reduced number of disabled households receiving a rebate under the reform options 2 and 3 but still shows a higher proportion in receipt (55-57%) compared to the national average (35%). The impact on households with a disability was discussed in more detail in section 6, as well as the possibility of introducing a safeguard for disabled households in fuel poverty under the Industry Initiative element of the WHD scheme.

Table 12: Distribution of households with disabilities across WHD recipients and population

Long term illness or disability*	Policy option 1 No Reform (n=1.9m)	Policy option 2 Reform (n=1.9m)	Policy option 3 Reform with additional spending (n=2.7m)	Proportion of fuel poor households in England & Wales (n=4m)	Proportion of households in England & Wales (n=24.8m)
Yes	67%	57%	55%	47%	35%
No	33%	43%	45%	53%	65%
*A household that contains someone with a long-term illness/disability that states their condition reduces their ability to carry out day-to-day activities. Examples of long-term illnesses/disabilities include, but are not limited to, conditions which affect vision, hearing, mobility and/or mental health.					

Source: Analysis of the English Housing Survey 2017/18 and Fuel Poverty dataset 2018

77. Overall, Government does not expect the WHD scheme to discriminate negatively based on the protected characteristics that we have been able to analyse, and therefore does not contribute to any pre-existing discrimination structure. We recognise that the current Core Group eligibility, for those in receipt of Pension Credit Guarantee Credit, will have a positive impact for those households with older members (age is one of the protected characteristics). For the other protected characteristics where we have data available, our analysis does not indicate we would be introducing any discrimination under the preferred policy option. When compared to the current scheme (option 1), the estimated distribution of rebates for the preferred policy option (option 3) is more closely aligned with both the fuel poor population and the overall population in England and Wales for sex, ethnicity, single/couples and disability.

8. Small and Micro Business Impact Assessment

78. The cost of WHD is a direct cost to business that is recovered by levying the cost of the obligation onto household energy bills. In 2011, the original supplier obligation threshold was set at 250,000 customer accounts, aiming to reduce the barriers to entry caused by the high administration costs of the scheme and encourage new entrants in a market where the largest six suppliers had approximately 99% of the market share. Under the Government's reform options, administrative costs are expected to fall due to data matching. The structure of the energy market has also changed substantially.

79. As of Q3 2020, the market share of suppliers outside the largest six (now including OVO's market share after the acquisition of SSE) reached approximately 30%, and there were around 55[43] active suppliers. This means many retail energy customers who might benefit from the WHD scheme are not in contention if their energy supplier is not obligated.

80. The supplier obligation threshold potentially creates an uneven playing field for suppliers, allowing small unobligated suppliers to price more competitively. With the preferred reform option, increasing obligation to both Core Groups and Industry initiatives will level this playing field, whilst introducing data-matching to Core Group 2 should help to reduce the administrative costs of the overall WHD scheme.

81. When considering proposals to lower the supplier obligation threshold, Government will aim to ensure that the changes will not have a significant disproportionate impact on both small suppliers below the 150,000 customer threshold or small and microbusinesses (businesses with fewer than 50 staff members). Through this consultation we are hoping to gather evidence on the likely administrative costs of delivering the reformed WHD scheme for smaller suppliers.

Impacts of reducing the threshold on suppliers

82. For the 2021/22 scheme year, the supplier obligation threshold is set at 150,000. Under the reform proposals the supplier threshold would fall from 150,000 to 50,000 in the first year of the reformed scheme (2022/23). The obligation threshold is not being reduced to zero (for participating suppliers) because this carries the risk of creating a barrier to entry since a new supplier may incur disproportionate administrative burden of setting up and administering the WHD rebate in time.

83. According to data from December 2020, four suppliers would be affected by a supplier obligation threshold reduction from 150,000 to 50,000 customer accounts (see Table 13). These suppliers hold around 350,000 customer accounts, some of whom will be eligible for the WHD. The current threshold of 150,000 means that 98.9% of the market would be obligated to provide the WHD to customers who are eligible under the reform, increasing to 99.5% if the threshold was reduced to 50,000. As with the original scheme, suppliers will be asked to contribute a proportionate cost in line with their market share, with any suppliers overspending on rebates being able to recoup these costs via reconciliation.

[43] Note that this is different to the total number of suppliers in Table 13 due to the different timings of the data.

Table 13: No. of suppliers by customer accounts

Customer accounts	Number of suppliers with customer accounts equal to/above the threshold	Number of additional obligated suppliers	Number of customers held by newly obligated suppliers	Market share of those obligated across Great Britain
150,000	22	-	-	98.85%
100,000	23	1	105,000	99.06%
50,000	26	4	350,000	99.54%
25,000	29	7	450,000	99.72%
20,000	30	8	470,000	99.76%
15,000	33	11	520,000	99.86%
10,000	35	13	545,000	99.91%
5,000	39	17	575,000	99.97%
1,000	44	22	590,000	99.99%
1	53	31	590,000	100.0%

Source: Ofgem, based on number of customer accounts as at 31 December 2020

84. The Government expects the costs of data matching/automatic rebate distribution to the Core Group 2 to be significantly lower than manual distribution under the no reform option where potential recipients currently contact their energy supplier to make a claim. As part of the consultation on the WHD extension for Scheme Year 11 (2021/22), BEIS asked energy suppliers to provide data on the administrative costs they incurred as a result of meeting their obligation in Scheme Year 9 (2019/20). These data indicate that Broader Group (excluding Industry Initiatives) costs made up around 70% of the estimated total scheme costs, with the core group costs making up around 20%. In a previous impact assessment for the threshold reduction from 250,000 to 150,000 customer accounts, Government estimated an annual cost of around £4,000/year for each newly obligated supplier[44]. This cost burden will increase with the addition of Core Group 1 and Core Group 2 but is expected to be significantly lower than the cost of manual administration of the original Broader Group, as search costs for eligible recipients will be transferred towards Government.

85. From April 2023 onwards, Government is proposing to reduce the supplier obligation threshold to 1,000 customer accounts. This staged approach means that smaller energy suppliers would have sufficient time to prepare and adapt their tariffs to consider the obligation, reducing the risk of non-compliance.

86. The proposed staged reduction of the threshold in England and Wales is partly enabled by the reduction in suppliers' administrative costs due to the proposed expansion of data matching and automatic identification of most of the eligible households. The power to set the supplier participation threshold is reserved under the Scotland Act 2016. If Scottish Ministers decided to maintain the current scheme in Scotland there is unlikely to be a similar reduction in administrative costs. Therefore, the UK Government is proposing to liaise with the Scottish Government on the issue of thresholds and will consult with stakeholders on an appropriate threshold for Scotland's scheme in due course.

[44] BEIS, Warm Home Discount Scheme 2018/19: Final stage impact assessment, Table A3.2: Costs to industry; Estimated costs per newly obligated supplier, Paragraph 164, https://www.gov.uk/government/consultations/warm-home-discount-scheme-2018-to-2019

Consumer impacts of reduction of threshold

87. For consumers receiving the WHD, the threshold currently disincentivises switching to an unobligated supplier, as those who are eligible would have to judge whether switching to a tariff from an unobligated supplier would offset the loss of WHD, which may create confusion. In 2019, Ofgem found that despite the overall switching rate increasing over time, those who received the WHD were the least likely of all customer groups to engage in the energy market[45]. Government believes that all consumers should benefit from good value and innovative deals and not face additional barriers to engaging with the energy market. Reducing the obligation threshold encourages rebate recipients to participate in the energy market as more suppliers are participating in the WHD scheme.

88. For customers not receiving the WHD, technically the threshold would currently incentivise switching to an unobligated supplier, whose prices would not include the costs of the WHD scheme. However, we do not have evidence to suggest this occurs in practice.

[45] Ofgem, Consumer Engagement Survey 2019, Slide 34, https://www.ofgem.gov.uk/publications-and-updates/consumer-survey-2019

9. Risks, Assumptions and Sensitivities

9.1. Risks

Regression approach to predicting high cost

89. The risk of a regression approach to predicting energy costs of a home may lead to rebates paid to households who are not in fact genuinely high cost (false positives) and other homes that are genuinely high cost not receiving them (false negatives). The current approach of distributing WHD rebates based solely on proxies to income level using means-tested benefits already leads to false negatives and false positives, in that households with low heating bills could themselves receive rebates in place of homes with higher costs. Further compounding this issue is the current Broader Group rebate that is currently distributed on a first come first served basis. Introducing a high cost criterion and distributing the rebate automatically addresses these issues.

90. The high cost criteria will never perfectly predict energy expenditure, but the government is consulting on its adoption owing to the capability to improve fuel poverty targeting and its simplicity to administer. There will be cases where a household is genuinely facing higher heating costs than that predicted by the model, which is a consequence of the incomplete data available. This will lead to differences between observed and predicted energy expenditure, but these differences should be relatively small in most cases. Using the model on the test data (the English Housing Survey) indicates that it predicts more than 4 in 5 households' energy costs within 25% of their actual costs.

91. Removing the high cost criteria used in the regression model would mean all households on a low income would compete with one another on a first come, first served basis, as in the current scheme. The high cost criteria is therefore providing a means to prioritise those most likely to be at risk of fuel poverty.

Risk of challenge based on data inaccuracies

92. In the event that the regression model and data matching process for Core Group 2 does not identify households who genuinely have energy costs higher than the 'high cost threshold' (false negatives), there is the risk that these households could challenge the fact that they have not been allocated a rebate. One way this false negative could occur is through inaccuracies in the VOA data on property characteristics, and most likely from the floor area (property age and type are much more likely to be accurate).

93. To mitigate some of the risk of inaccuracies in floor area we use 'floor area bands' in predicting energy costs. If a property has an increase in floor area (e.g. due to an extension) since the VOA data was recorded, the property could retain the same floor area band used in our modelling. Therefore this property would have the same predicted energy costs. For those properties that have had a large enough change in floor area to move them up one (or more) floor area bands, the householder would be able to challenge the WHD rebate allocation. The challenge process is outlined in the Consultation document that this IA accompanies. Successful, eligible challengers would be issued with a rebate. We expect challenges based on floor area to only be a small number of cases but cannot provide a specific figure due to a lack of evidence. We do not have evidence on the numbers (and size) of extensions carried out in properties occupied by the Core Group 2 eligible pool; this is not in the VOA data.

Eligible pool size

94. The Core Group sizes are initially determined by households in receipt of the benefits listed in Table 2. The Core Group 2 is then ranked by predicted energy expenditure and a cut off point or energy cost threshold is chosen so that all of the remaining budget[46] (after those in receipt of Pension Credit Guarantee Credit and Industry Initiatives are deducted) is spent.

95. Industry Initiatives will act as a buffer so that, if either Core Group increases in size, suppliers may spend less on Industry Initiatives to avoid breaching the spending envelope. The Government's current preference is to keep the high cost threshold fixed for the duration of the scheme, to avoid households becoming eligible or losing their eligibility from changes in the amount of predicted energy expenditure, and allow Industry Initiatives spend to vary (within a cap). Changes in the size of the eligible pool arising from different household types moving in and out of benefits are expected to be absorbed by Industry Initiatives. If, however, a situation arises in which the Industry Initiatives budget is not enough to absorb additional rebates then the Government may consider intervening by adjusting the high cost threshold accordingly.

96. The Government is exploring ways to control the size of the eligible pool sizes by:
    i) including an earnings threshold for UC (e.g. in the same way the current scheme applies one to UC) and
    ii) adjusting the high energy cost threshold, if the spending variation on Industry Initiatives exceeds a certain limit.

97. Some flexibility in Industry Initiatives spending will be allowed between years (carry-over and carry-under) to help supporting organisations manage a degree of fluctuation in spending across scheme years.

98. The preferred options 2 and 3 propose excluding DLA/PIP recipients as a qualifying group for Core Group 2 eligibility since DLA/PIP payments are not means-tested on income. Those DLA recipients who are low income are likely to be in receipt of other qualifying low-income benefits. However, if ways to incorporate income tests can be found then reinstating DLA/PIP as a qualifying criteria could be considered to ensure every low income DLA/PIP household is potentially eligible for a rebate.

Covid-19

99. The economic impacts of the coronavirus pandemic have increased unemployment, leading to an increase in Universal Credit claimants[47], therefore increasing the number of households eligible for the current Broader Group WHD rebate and the proposed Core Group 2. However, estimating the impact this would have on the number of households eligible for the WHD for the four years of the scheme (2022/23-2025/26), and particularly how this could change the demographics of recipients, is challenging given the uncertainty around the long-term impact of Covid-19.

100. The existence of the WHD will be even more important, to provide support to these vulnerable households, prioritising those on low incomes and with the highest

[46] When setting the energy cost threshold, we will also take into account of the expected data 'match rate' (i.e. how many eligible customers are identified and matched to energy suppliers' customer records), therefore setting the threshold such that providing rebates to the expected number of 'matched' customers would reach the target spend envelope.

[47] There were 4.9 million households on Universal Credit in November 2020 This is an increase of 2.2 million since March 2020 (the start of the Covid-19 pandemic). https://www.gov.uk/government/statistics/universal-credit-statistics-29-april-2013-to-14-january-2021/universal-credit-statistics-29-april-2013-to-14-january-2021

energy costs. The increased spending envelope will extend the reach of the scheme and reduce energy bills for at least some of those struggling with the long-term impacts of the pandemic.

9.2. Assumptions

English Housing Survey and Fuel Poverty Dataset

101. The modelling used in this Impact Assessment to determine which households received the rebate was based on the English Housing Survey (2017/18) and Fuel Poverty dataset (2018). As this scheme is designed for England and Wales, the results shown in this impact assessment have been upscaled. However, as modelling is based on an England-only survey, the demographic, fuel poverty and rebate distribution may differ to the actual characteristics for Wales.

Carbon Values

102. The NPV estimates in this Impact Assessment are based on central carbon values from the Green Book supplementary guidance[48]. However, carbon values are currently under review. Higher carbon values would increase the carbon cost and hence reduce the NPV of the scheme. The sensitivity analysis in Section 9 shows the combined effects of testing different input assumptions.

Health Impacts

103. A previous WHD evaluation[49] found a small increase in the temperature of properties in receipt of the rebate and concluded it is likely to have led to health improvements amongst WHD recipients. The health benefits of the WHD have not been monetised in this impact assessment therefore, while all the costs are, the NPV of the policy is likely to be higher in reality than those presented in this Impact Assessment.

Labelling Effect

104. Previous WHD Impact Assessments assumed that 41% of the total WHD rebate is spent on improving the thermal comfort of the recipients' homes. This is based on research for the Winter Fuel Payment which showed that labelled transfers (e.g., the label "Winter Fuel Payment") led to a higher proportion of the transfer being spent on fuel use than would typically be expected for a non-labelled transfer[50]. The WHD evaluation's findings regarding the labelling effect are mixed and do not offer conclusive results so the 41% assumption has been retained and the Government will keep it under review.

Core Group Coverage

105. The assumed size of Core Group 1 is based on DWP forecast projections[51] of Pension Credit Guarantee Credit claimants which take account of retirement ages and attrition. The size of Core group 1 will determine the size of Core Group 2 in the first year of the reformed scheme and hence impacts on which household types are in contention

[48] https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal

[49] https://www.gov.uk/government/publications/warm-home-discount-evaluation-2010-to-2015

[50] Beatty, Blow, Crossley& O'Dea (2011). Cash by any other name? Evidence on Labelling from the UK Winter Fuel Payment, IFS Working Paper 11/10, available at: http://www.ifs.org.uk/wps/wp1110.pdf

[51] Benefit expenditure and caseload tables 2020, Outturn and Forecast Autumn Budget 2020: https://www.gov.uk/government/publications/benefit-expenditure-and-caseload-tables-2020

for a rebate. The size of the Core Groups and impact on the WHD budget are discussed in the risks section.

Scotland apportionment

106. In accordance with the consultation proposals, we have apportioned 9.4% of the total spending envelope for GB to Scotland, based on the proportion of electricity and gas meters in Scotland compared to the total in GB (a three-year average using data from 2017-2019)[52].

Fuel poverty indicator

107. The fuel poverty definition used for this Impact Assessment is LILEE (see paragraph 13). The size of the fuel poor population quoted in this document may not match published statistics as we have calculated baseline fuel poverty based on income and FPEER bands before the inclusion of the WHD, so that the impact of the WHD can be observed for the different policy options.

Administration costs to industry

108. For the 'No reform' option, we estimate the total industry administration costs to be approximately £10m per year, using data provided by energy suppliers as part of the consultation of the WHD extension for Scheme Year 11 (2021/22)[53]. This was based on the administration costs incurred by suppliers to meet their obligation in Scheme Year 9 (2019/20)[54]. Most suppliers also provided a breakdown of costs between the Core Group and Broader Group, which indicated that the Broader Group was significantly more expensive to administer.

109. We expect that under the reform options (2 and 3), the new 'Core Group 2' will be cheaper for suppliers to administer than the current manual allocation of rebates for the Broader Group and expect the costs to be more in line with those that suppliers currently face for the Core Group (given the similarities in data matching/automatic rebate distribution). Therefore, for option 2 (reform with current spending) and 3 (reform with additional spending), we have been guided by the current Core Group costs and derived an assumption that industry administration costs will be approximately 50% and 70% of the current scheme (no reform) respectively. The latter is slightly higher due to the increased spend requiring more rebates to be distributed and hence we would expect some increase in processing costs.

110. We welcome further evidence from industry to inform our estimates and assumptions for the administration costs under reform scenarios.

Administration costs to Government

111. For the current WHD scheme, the Government bear some of the administrative costs of delivering the rebates, especially with respect to data matching activities for delivering Core Group rebates (including the sweep-up and helpline elements of the

[52] https://www.gov.uk/government/collections/sub-national-electricity-consumption-data and https://www.gov.uk/government/collections/sub-national-gas-consumption-data

[53] This estimate was used in the final stage Impact Assessment for the 2021/22 WHD extension: https://www.gov.uk/government/consultations/warm-home-discount-scheme-2021-to-2022

[54] Although these estimates were provided in relation to the scheme covering Great Britain as a whole, we have made a simplifying assumption that these will also apply to England and Wales rather than attempt to apportion them.

process that are overseen by DWP). This is estimated at ~£2m for the no reform option in this IA, based on actual costs from previous years[55].

112. For reform options 2 and 3, both Core Group 1 and Core Group 2 will be administered in a similar way to the current Core Group, therefore we have used the current Government admin spend to extrapolate estimates for the reform options. Using a simplifying assumption that most current costs are to administer the Core Group (as opposed to the Broader Group) and that the costs will scale proportionally with the number of rebates being delivered. Since the "Core Group"-style rebates roughly double under option 2 and triple under option 3 (compared to the current scheme), we have assumed the Government admin costs would also scale in this way. This also allows some headroom for the increase in costs due to the reduction in supplier threshold and more suppliers being obligated to participate in the scheme.

Income elasticity

113. Income elasticity is used to measure the change in energy demand because of a change in income, and the income elasticities used are based on a study by Jamasb and Meier (2010)[56]. Income elasticity influences the changes in consumption and therefore resources, emissions and air quality, where billpayers are overall expected to make small changes to their energy consumption and low income recipients of WHD are expected to increase their energy consumption at a greater rate than billpayers. This causes a net increase in energy consumption.

Monetising the benefits of debt relief

114. Around half of debt relief has been estimated to benefit households, because of the individual debt cap. We assume that energy suppliers would have provided debt relief to households even without the WHD scheme, such as those with very large debts and unlikely to pay off the debt. The individual debt relief cap ensures that debt relief will go to more households, who may be struggling with shorter term or smaller debts. Therefore, we assume that half of debt relief spend will be realised as a benefit.

9.3. Sensitivities of key assumptions

115. Given the uncertainty around the key assumptions, the following sensitivity analysis has been undertaken:

- Administration Costs
- Energy Demand Response
- Energy Prices and Emissions Cost
- Combination of all scenarios

116. Where possible, the sensitivity analysis is based on scenarios provided alongside the central assumptions. For instance, the authors of the energy price and emissions costs data, and the labelling effect data, provide high and low boundaries for their estimates, which are used in this analysis. However, assumed industry administration costs are based on participating suppliers' estimates, for which high and low boundaries

[55] As for the Industry admin costs, the current scheme costs relate to the scheme covering Great Britain as a whole but we have made a simplifying assumption that these will also apply to England and Wales rather than attempt to apportion them.

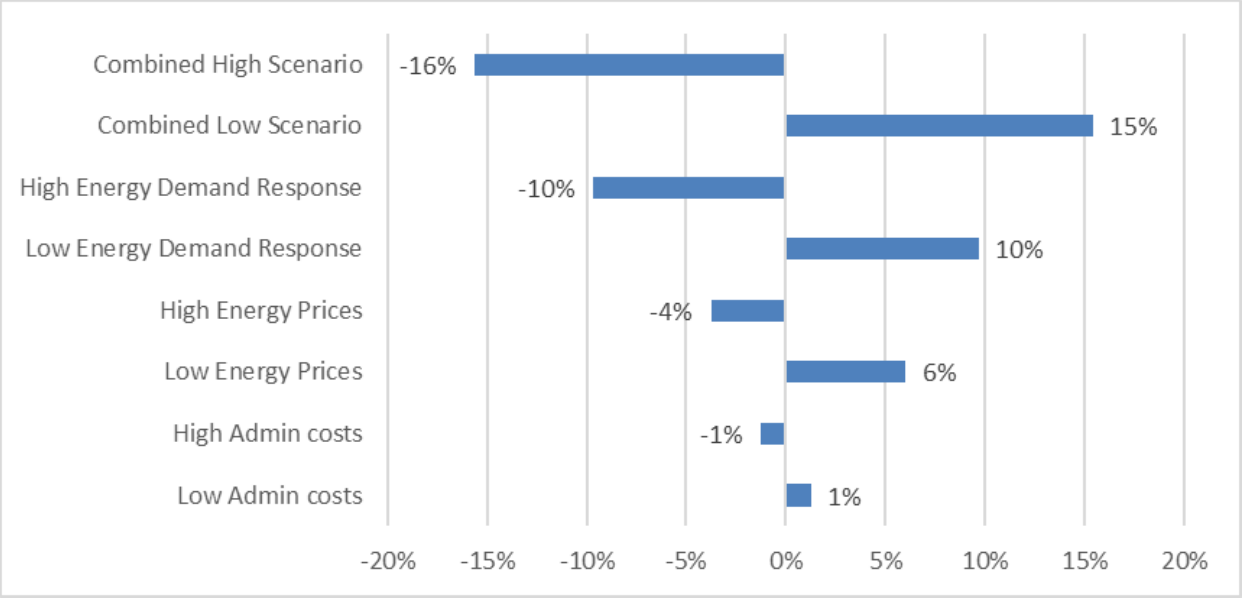
[56] Source: Jamasb and Meier (2010), Household Energy Expenditure and Income Groups: Evidence from Great Britain. https://www.repository.cam.ac.uk/handle/1810/229412

were not provided. In the absence of high and low boundaries provided by suppliers, a discretionary high/low margin of 25% is applied.

117. The central scenario for the preferred policy option (reform with additional spending) provides an NPV of £1,150m across the four years of the scheme. The combined high scenarios lead to a 16% reduction in NPV, largely due to greater, more costly emissions. The combined low scenarios lead to a 15% increase in the NPV.

118. In order to measure the NPV's sensitivity to variation in the individual assumptions, all other aspects of the policy have been kept constant so that it is possible to isolate the impact of a change in each assumption on the NPV.

Figure 5: Percentage change in NPV from changing assumptions in the analysis



10. Summary and Preferred Option

119. The Government wants to improve targeting of WHD rebates to those most at risk of fuel poverty and increase the number of rebates to provide greater support each Winter.

120. The Government's preferred approach is to reform and expand the WHD to reach around 2.7 million households, an increase of 800,000 (Option 3). The Government plans to do this by increasing the overall size of the scheme to £442m from 2022/23 and increase this with inflation throughout the remainder of the 4-year scheme (ending in 2025/26).

121. As the scheme is funded by energy suppliers that pass the costs onto their customers, we estimate this will increase the average energy bill by ~£5 per year. However, given other price protection in place, including the energy price cap, the Government believes this is appropriate for providing help to an additional 800,000 households in or at risk of fuel poverty.

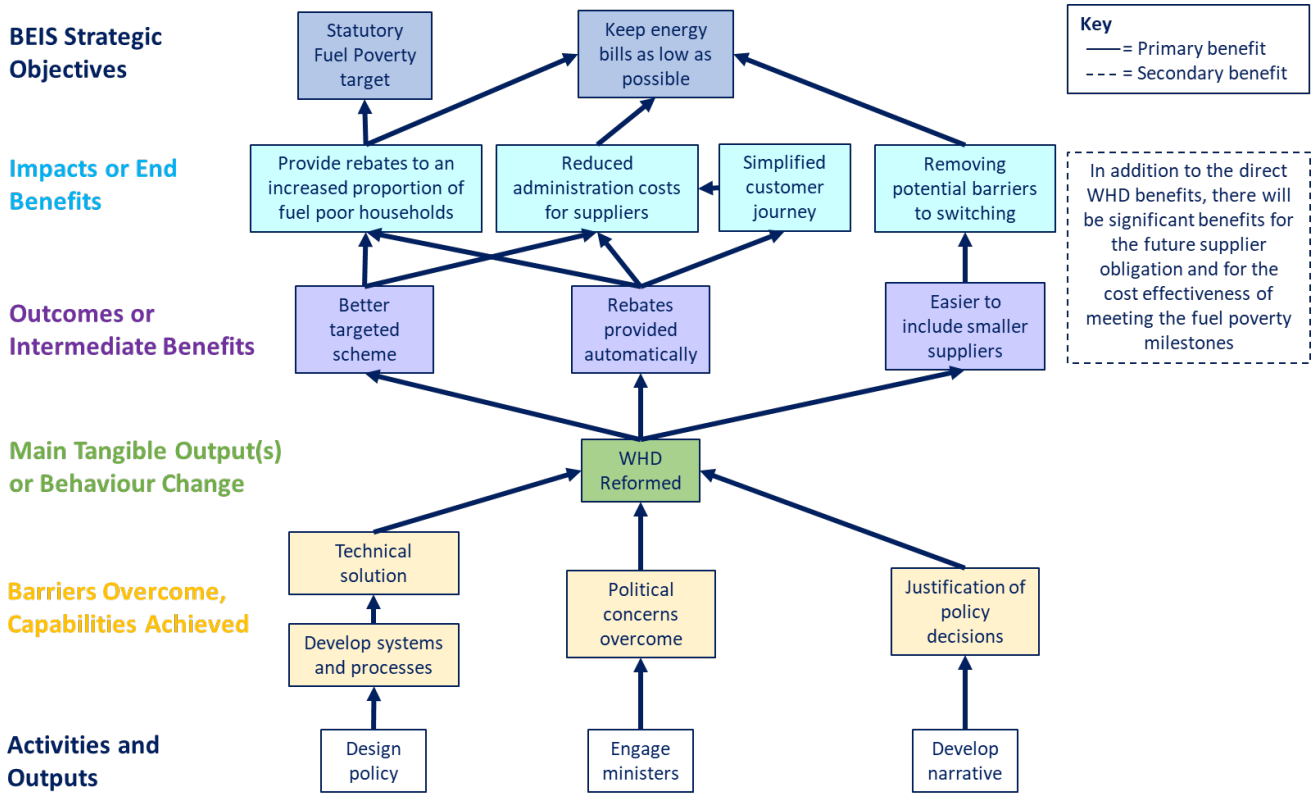
122. The Government is consulting on these options and aims to publish its response in winter 2021/22. The Government plans to lay regulations when the response is published and procure delivery services in time to administer the new scheme in autumn 2022.

11. Monitoring and Evaluation

Theory of change

123. Figure 6 shows the strategic objective for the WHD reform and how the anticipated outcomes and impacts of the policy are expected to feed into this.

Figure 6: Theory of change map for the proposed WHD reform



Previous Evaluation

124. An evaluation of WHD was conducted in 2017, covering scheme delivery between 2010 and 2015[57]. The evaluation conducted qualitative research with recipients as well as modelled impact analysis covering energy expenditure and the indoor environment. Key lessons from this evaluation have been applied to develop these proposed reforms, including:

- The rebate typically alleviated households' electricity usage for several months, releasing cash to be spent elsewhere (such as on gas use for heating or other general expenditure). The scheme's primary objective on "helping to mitigate the burden of rising energy prices on low-income households" was therefore achieved, which supports continuation of the core policy.
- However, the evaluation concluded that the scheme's population targeting was not optimal for the primary objective on "removing a significant number of households from fuel poverty and improving the thermal comfort and health of assisted households". Core Group eligibility was not found to be a strong indicator of households living in a cold home. Instead, modelling shows that the WHD appeared to target low-income pensioners rather than those in fuel poverty. However, warmth

[57] https://www.gov.uk/government/publications/warm-home-discount-evaluation-2010-to-2015

and health benefits were greater for those living in less energy efficient homes. The proposed reforms amend targeting to include VOA evidence to identify cold homes, following analysis carried out by UCL that found deficiencies with the existing eligibility criteria.

- UCL conducted analysis to determine how well WHD eligibility criteria identified households at risk of living in cold homes. The analysis found that the Core Group eligibility criteria were not strong indicators of households living in cold homes (i.e. <18 °C). This reflected the predominant type of home that those households occupy, i.e. mid-20th century flats in the social rental market. Instead, a stronger predictor of coldness was a measure of the dwelling energy performance, length of residency, household type, dwelling age, presence of a boiler, age of the household reference person, number of people in the home, household income, number of bedrooms, and whether the household reference person is employed.

125. This evaluation also captured some lessons on the Monitoring and Evaluation approach itself, including:

- The qualitative research into recipients' experience of the rebate was limited by opt-in sampling, potential recall issues, and a low sample size. As a result, there was limited generalisability of these findings to the experience of recipients who received the rebate through different suppliers.
- The quantitative research was based exclusively on theoretical modelling, telling us what effects the rebate *should* have had on recipients, but it was not drawn from empirical data.
- Both key limitations were a result of budget constraints. Any future evaluation plans would therefore need to consider whether they can add value to the existing evaluation of the current model, and whether the costs to do so are proportionate to the evidence needs of this scheme and any planned successors.

126. Given the evidence available from the existing evaluation, a proportionate approach to monitoring and evaluation is to focus on targeting some of the key evidence gaps that remain unaddressed or are newly created by the reforms. Scoping work by BEIS would first be needed to map these, then determine the feasibility of addressing these through either monitoring or evaluation work.

Monitoring

127. There are some monitoring arrangements in place for the current WHD scheme which will still be relevant to the proposed reform and we would anticipate that these activities would continue. This includes updates from Ofgem during the policy delivery such as: which suppliers are obligated to provide rebates; schemes approved for Industry Initiatives; and numbers of rebate recipients. DWP also provide numbers of rebate recipients split by some household characteristics.

128. The delivery of the WHD rebate under the proposed reform requires energy companies to undertake more data matching than currently takes place to confirm eligibility. The Government will explore using powers under the Digital Economy Act 2017 to use the data[58] to allow a more detailed assessment of the characteristics of households receiving a rebate. This will inform an assessment of the extent to which the changes to targeting methodology led to a different type of households and properties being reached. A primary focus of obtaining these data would be to understand the demographics of the people reached, including PSED coverage (such as disability).

[58] Subject to rules around data protection.

129. In addition, Government will monitor the total spend in each year of the reformed scheme. If there are large overspends or underspends on rebates, we may adjust either the Industry Initiative budget or, if the overspends or underspends are too large or occur consistently, the high cost threshold (as mentioned in paragraphs 40 and 46).

Evaluation

130. As above, BEIS will consider the proportionality and methodology of an evaluation of the scheme, after responses to the consultation have been collected, evidence gaps have been mapped in full, and scoping work by BEIS has been completed on the feasibility of addressing through either monitoring or evaluation activity.

131. Detailed evidence covering the experiences and customer journey of WHD recipients would require new primary research. The previous evaluation project has already provided evidence collected from recipients. Therefore, once the reform design is finalised, BEIS will review the extent to which the recipient journey and experience has been altered from the 2010-2015 scheme, for beneficiaries with different personal characteristics such as age, ethnicity and disability status.

132. If and where substantial recipient-facing changes are made to the delivery, and it is deemed proportionate, BEIS will seek to externally commission research in this area. Procurement and contract management of this research would be owned by BEIS's Buildings Energy Evaluation team.

133. If required to support the collection of primary evidence, BEIS will explore data sharing procedures that, subject to data protection rules, support recontact of recipients by BEIS, its contractors or stakeholders specifically for the purposes of evaluation.

134. The impact of WHD is closely related to the impact of other fuel poverty schemes such as Energy Company Obligation and Winter Fuel Payments. BEIS will consider whether it is appropriate and proportionate to consider externally commissioning a cross cutting fuel poverty impact evaluation for the domestic energy efficiency policy portfolio, allowing the impact of individual or combined policy interventions on energy use and health outcomes for different types of beneficiary to be assessed, and how this has changed before and after the reforms. Procurement and contract management of this research would be owned by BEIS's Buildings Energy Evaluation team.

Budget and resourcing

135. The expected budget for the monitoring and evaluation work is highly dependent on the data that can be used for this purpose, limited data would curtail the amount of monitoring and evaluation that could take place. A best-case estimate would be using WHD delivery statistics, analysis of this data to assess impact and contacting households for interviews.

Timeline

136. As monitoring would largely replicate that of the current WHD policy, this would remain in place and likewise continue to be delivered over the lifetime of the reformed policy. The additional monitoring data mentioned in paragraph 128 would be collected and reviewed when available for each scheme year.

137. BEIS would review potential differences in beneficiary journey and experience no later than 3 months following finalisation of the reform's design. If deemed necessary and proportionate, research into the changed participant experience would be procured no later than July 2022 (3 months before delivery commences) to support delivery of timely early insights.

138. Evaluation timings would, like budget, be highly dependent on the scope and design of the evaluation. A decision on whether to evaluate, and the approximate scope (including deliverables and frequency) and methodology, would be made no later than April 2022 (6 months before delivery commences).

12. Annex

Annex 1: Regression model

Government is proposing to use VOA data (property age, type and floor area) and a regression model trained on EHS data to predict households' energy costs. DWP data on means-tested benefits recipients and HMRC tax credits data (with an income threshold) are used as a proxy to identify low-income households. These two data sources would then be matched to identify low-income households with high modelled energy costs and such households automatically receive a rebate if with a participating supplier. The approach taken for the modelling of households' expected energy costs is an Ordinary Least Squares linear regression model. The regression identifies the linear impact of a given variable on the dependent variable – in this case, the impact of a given property characteristic on the household's predicted equivalised energy costs. The values attributed to each property characteristic are additive, meaning the overall predicted equivalised energy cost for a given household is the sum of the values attached to the characteristics of their property.

The regression model has been applied to the EHS 2017/18 dataset and predicted the log of equivalised fuel expenditure. The output statistics show that the regression equation has an adjusted R-squared score of 0.47 and the coefficients are highly significant (most at the 99% confidence interval). Analysis based on an earlier version of the EHS data showed that the regression using the log-transformed fuel expenditure variable achieves an improved adjusted R-squared value, with an improvement of roughly 5 percentage points. This improvement is carried forward to the policy's fuel poverty targeting, where the model achieves an improved fuel poverty hit-rate of roughly 1 percentage point[59].

An example of a household's predicted equivalised energy bill is provided for illustrative purposes. In this example, a $90m^2$ semi-detached property built in 1990 is expected to have fuel costs of ~£1,120 per year, Meanwhile, an identical but slightly older property built in 1980 is predicted to have relatively higher fuel costs of ~£1,160 per annum.

Every scheme year the regression model is applied to VOA data and predicts households' equivalised energy costs. Any missing values in the VOA data will, where possible, be estimated using a range of statistical methods. These imputation processes include probabilistic calculations based on neighbouring properties, similar dwellings and, where available, the Energy Performance Certificate[60]. Households receiving a means-tested benefit are identified by DWP and ranked in order of descending energy costs. The 'high cost' threshold line is set by BEIS so that the Core Group 2 budget is spent.

The regression model methodology has been reviewed by University College London (UCL) and the Office of National Statistics (ONS) and was subsequently refined to develop the version used in this Impact Assessment. The Government will continue to develop and refine the regression approach by testing with the latest year of the EHS (when available later this year) and investigating an outstanding recommendation from peer review, which suggested utilising explanatory variables from the Valuation Office Agency data (upon which the regression will be applied during administration).

We welcome views on how our approach and methodology could be developed further.

[59] Note this was measured under the previous LIHC fuel poverty metric.

[60] The Annex of the consultation document describes the imputation processes in more detail.

Annex 2: Equity weights

The Warm Home Discount scheme is redistributive, transferring income from all billpayers (those from participating suppliers) to low income and vulnerable households. Equity weighting is founded on the principle that relatively poor households put a greater value on a unit of additional income than relatively rich households.

The equity weighting used below is based on the guidance published in the Green Book.

$$Equity\ weight\ for\ each\ decile = \left(\frac{Median\ Income\ of\ total\ population}{Median\ income\ of\ income\ decile}\right)^{1.3}$$

Table 14: Equity weights used in economic appraisal

Income decile (where 1 is lowest)	Decile Median of After Housing Costs Income Equivalised (£)	Equity weight
1	6,500	5.28
2	11,700	2.44
3	15,100	1.74
4	18,300	1.36
5	21,600	1.10
6	24,900	0.91
7	29,000	0.75
8	33,900	0.61
9	41,700	0.47
10	61,600	0.28

Where an income decile of 1 is the lowest, and 10 is the highest.

Figures based on the English Housing Survey 2017/18

AHC equivalised incomes rounded to nearest £100.

Calculated in line with:
HM Treasury, The Green Book (2020), 'Distributional analysis by income group', Annex A3. Sub-national and Distributional Analysis, Page 97-99.
https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent

Annex 3: Equivalisation factors[61]

The following tables present the equivalisation factors used in the derivation of the English fuel poverty flag. A household's income and fuel cost are divided by the relevant equivalisation factors to reflect the fact that different households have different spending requirements. This creates the final 'Equivalised After Housing Cost (AHC) income'.

Equivalisation factors for fuel costs under the Low Income, Low Energy Efficiency indicator[62]

Number of people in household	Equivalisation factor
One	0.82
Two	1.00
Three	1.07
Four	1.21
Five or more	1.32

Equivalisation factors for after housing costs income under the Low Income, Low Energy Efficiency indicator[63]

Number of people in household	**After Housing Costs (AHC) income equivalisation factor**
First adult in the household	0.58
Subsequent adults (includes partners and children aged 14 or over)	0.42
Children under 14	0.20

[61] see https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

[62] See table 10 of the fuel poverty statistics methodology handbook

[63] See table 12 of the fuel poverty statistics methodology handbook

Annex 4: Glossary

Average fuel poverty gap	The reduction in fuel bill that the average fuel poor household needs in order to not be classed as fuel poor
Equivalised	Equivalisation is a process that adjusts a household's income or fuel expenditure to take into account the size and composition of the household. This reflects the fact that larger households will require a higher net income to achieve the same economic well-being and standard of living as a household with fewer members.
Fuel poverty	Low income households who cannot afford to keep their homes warm at reasonable cost. Fuel poverty in England is measured using the Low Income Low Energy Efficiency (LILEE) indicator, which considers a household to be fuel poor if the occupants: • have a residual household income below the poverty line (after accounting for energy costs); and • live in a home that has an energy efficiency rating below Band C.
Fuel poverty gap	**The difference between** the fuel cost faced by a fuel poor household and the fuel cost it would face if it wasn't high cost.
FPEER	Fuel poverty energy efficiency rating
LIHC	Low income High cost (fuel poverty metric prior to February 2021).
LILEE	Low income low energy efficiency (current fuel poverty metric).
SAP	Standard Assessment Procedure[64]
Warm Home Discount	An energy bill rebate applied to a household's gas or electricity bill

[64] https://www.bregroup.com/sap/standard-assessment-procedure-sap-2012/