NATIONAL INFRASTRUCTURE COMMISSION

Finlaison House
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Rachel Reeves MP
Chair
Business, Energy and Industrial Strategy Committee
House of Commons
London SW1A 0AA

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Dear Chair,

Thank you for your letter of 2 April and the opportunity to give evidence to the Committee on energy efficiency.

I am sorry that some of the figures in the National Infrastructure Assessment (NIA) were not clear. I am grateful for this opportunity to set out the position in more detail and to correct some errors that have been identified in the process. I will ensure that a copy of this letter is published on our website.

The NIA sets out the Commission's overall recommendation on energy efficiency that:

> *"government should set a target for the rate of installations of energy efficiency measures in the building stock of 21,000 measures a week by 2020, maintained at this level until a decision on future heat infrastructure is taken."*

It states that the policies to deliver this should include direct public capital investment in energy efficiency improvements in social housing, tighter regulation in the private rented sector, and the use of innovative approaches for driving energy efficiency in the owner occupier market. The target rate of 21,000 measures per week relates to England only[1] and was based on analysis produced for the Commission by Element Energy and E4tech,[2] which found that a programme of 'low cost' measures consistent with this rate of installation would be cost effective whichever pathway to decarbonising heat is taken.

In relation to your first set of questions, the NIA compares this to a current rate of installation of roughly 9,000 measures per week. Unfortunately, the explanation I gave to the Committee for how this figure was derived was incorrect. It was based on data in *Household Energy Efficiency National Statistics 2017*,[3] but not on the figures for the overall change in home insulation levels on page 45 of that report, which I cited in my evidence and which, on further review, did include new build. It was rather calculated from the total number of retrofit measures installed under all government schemes in Great Britain (Table 1.1 of the underlying data set) across five years from Jan 2013 to Dec 2017, divided by the number of weeks. This approach was taken on the basis that an average calculated

[1] Page 44 of the NIA misattributes 'in England' to the 21 million figure, when it should refer to the 21,000 figure.
[2] https://www.nic.org.uk/supporting-documents/cost-analysis-of-future-heat-infrastructure-options/
[3] https://www.gov.uk/government/statistics/household-energy-efficiency-national-statistics-detailed-report-2017 [NB: This provides statistics for 2017, but was published in 2018.]

over a few years provides a more appropriate picture of recent progress than a single month's or year's snapshot. I am extremely sorry for not having provided accurate information to the Committee on this point.

The purpose of the 9,000 measures per week figure, however, was only to illustrate the point that current activity levels are far short of those required and it was never intended to be an exact comparator. This reflects the fact that, due to gaps in the data available, there are a number of unavoidable differences between the two figures, for example:

- The 21,000 figure includes those installing insulation or glazing measures at their own expense ('self-payers'), who are likely to make up a significant proportion of total installations. These are excluded from the 9,000 figure, which only covers installations funded through government schemes.
- The 21,000 figure is based only on measures – predominantly insulation – which would be cost effective under all heat decarbonisation scenarios, whereas the 9,000 figure includes some measures, such as improved boilers, whose cost effectiveness depends on the scenario chosen.
- The 21,000 figure is for England only, whereas the 9,000 figure covers all of Great Britain. A comparable England only figure, covering all government schemes, is not available, but the Household Energy Efficiency National Statistics publication does provide a breakdown by country for the ECO scheme alone. This shows an average rate of installation of roughly 7,000 measures per week in England for the 2013-2017 period.

Furthermore, the 9,000 figure was not used in any of the calculations underpinning the Commission's recommendations (which were, as set out above, based on the work carried out by Element Energy and E4tech). Therefore, while the NIA text could have been clearer that it is not directly comparable to the 21,000 measures a week in total recommended for England, using a different figure would not have altered the recommendations.

With regard to your questions on costs, the total cost of delivering the proposed 21 million measures across the UK was estimated by Element Energy and E4tech as £26 billion in 2016 prices. On the basis of its share of total UK properties, roughly 83% of this (c. £21.6 billion[4]) would fall within England. We have not, however, been able to calculate from this the 'investment gap' in the manner that you requested. This is because the data issues set out above – and particularly the lack of data on self-payers – mean that no assessment of total current progress can be made on an equivalent basis to the 21,000 target. I have therefore instead provided an explanation below of how the Commission considered each element of the costs associated with its recommendation would be met.

[4] For comparability with the other figures in the NIA, this is equivalent to £22.7 billion in 2018 prices.

This incorporates answers to your remaining questions and I hope provides a useful alternative analysis of the investment challenge.

First, as you note, the Commission recommended that £3.8 billion of these costs (in 2018 prices) should be met through public investment, and hence incorporated in its 'fiscal remit'. This was based on its estimate of the cost of installing 'low cost' energy efficiency measures across the English social housing stock. Unfortunately, there was a discrepancy between the recommendation in the NIA report, which said that this investment would be provided over the period to 2030, and the fiscal remit table,[5] which allocated this investment over the period to 2035-36. We have alerted BEIS to this discrepancy, but in light of the Committee's enquiry we have also looked again at the fiscal remit figures. This has identified some flexibility (in particular, the fact that not every year's figures sum to exactly 1.2% of GDP), which makes it possible to meet the recommendation by 2030-31 without breaching the guideline, should the government wish to do so. The alternative funding profile for the period to 2030-31 would be as set out below:

2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
£0	£200m	£200m	£300m	£400m	£600m	£300m	£400m	£500m	£500m	£400m

Second, for fuel poor households outside the social sector, the Commission followed the approach taken with the current Energy Company Obligation (ECO) scheme and assumed that the costs of improving energy efficiency would be socialised across all households through energy bills. These costs were therefore included in its 'economic remit'. [6]

To achieve this, the cost of an illustrative energy efficiency programme was calculated, based on 1.5 measures per fuel poor household and delivered over a 10-year period from 2020-2030. The cost of such a programme was estimated at £7.98 billion in 2018 prices, but because the economic remit was only required to include the marginal costs of recommendations, a total of £7.2 billion was subtracted. This was on the basis of commitments in the Clean Growth Strategy to "support around £3.6 billion of investment to upgrade around million homes through [ECO], and extend support for home energy efficiency improvements until 2028 at the current level of ECO funding". The remaining £780m was included in the economic remit and accounts for part of the £1.75 billion to 2030 referred to in your letter.

The rest of the £1.75 billion relates to the Commission's recommendations on decarbonising domestic heat. I have provided an Annex to this letter which sets out in more detail how the total was calculated.

[5] Table 7.1 (pg 112) of the National Infrastructure Assessment with additional detail provided in the supplementary table published at: https://www.nic.org.uk/supporting-documents/technical-annex-table-7-1-supplement/

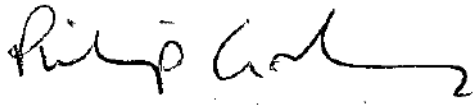
[6] The Commission is required to assess the potential impact of its recommendations on consumers' bills and wider public expenditure where these are not funded through public investment. This is referred to as the 'economic remit'.

Finally, the Commission considered the remaining sectors: non-fuel poor owner-occupiers and the private rented sector. In these sectors, the Commission's view was that this investment would be provided directly by property owners, just as many households today self-pay for energy efficiency measures without support from any government scheme. Given that the definition of the 21 million 'low cost' measures was that they provided a net reduction in energy costs over time, this investment was not considered to represent a cost to consumers and so was not included in the economic remit. The Commission did, however, recognise that encouraging households to install energy efficiency measures, even where they are cost effective, is notoriously difficult, which is why it recommended that a range of different initiatives would need to be trialled and evaluated for the owner occupier market and that regulations should be tightened over time for the privately rented sector.

Your letter also asks whether any adjustment to the economic remit numbers would change the calculations for the £3.8 billion in the fiscal remit. The answer is that it would not, as each figure was based on the specific approaches recommended for that sector – a change to the level of funding provided to support fuel poor households outside the social housing sector, for example, would not alter the amount of funding needed to support energy efficiency improvements to England's social housing stock.

I hope this answers your questions and I would like to apologise for any confusion and for the mistakes that have been identified both in our report and in my evidence to the Committee. I would be happy to provide any further information or clarification which may be of use.

Yours sincerely,



Philip Graham

CEO, National Infrastructure Commission

ANNEX: ECONOMIC REMIT CALCULATION OF COSTS OF ENERGY RECOMMENDATIONS

Details of how the impacts of the National Infrastructure Commission's recommendations on bills for households and businesses and on overall public sector resource expenditure (the 'economic remit') were calculated are provided in the NIA impact and costings notes published at:

https://www.nic.org.uk/supporting-documents/national-infrastructure-assessment-impact-and-costings/

The table on page 12 of those notes headed 'Aggregate impact of recommendations on bills, by sector' sets out the impact, split between households, businesses and the public sector, of the Commission's energy recommendations. In line with the wider approach to the economic remit, this only includes the marginal impact of the Commission's recommendations and not the cost of any existing government commitments in this sector.

The costs in the table cover two of the Commission's recommendations. The first relates to energy efficiency, in respect of which the additional costs, over and above existing commitments, associated with a £7.98bn programme of improvements aimed at fuel-poor households outside the social rented sector are included. These additional costs total £780 million to 2030 (with existing government commitments totalling £7.2bn over the same period).

The second is the Commission's separate recommendation regarding trials of hydrogen for home heating, which are assumed to be met through bills with costs recovered from all gas customers (consistent, for example, with a National Grid innovation fund).

A full breakdown is set out below.

Annual total impacts relative to baseline: households, businesses & public sector (£ million, 2018/19 prices)		**2020-25**	**2025-30**	**2030-35**	**2035-40**	**2040-45**	**2045-50**
Illustrative programme of energy efficiency measures for fuel poor private households	Households	+£78	+£78	£0	£0	£0	£0
	Businesses	£0	£0	£0	£0	£0	£0
	Public sector	£0	£0	£0	£0	£0	£0
	Total	**+£78**	**+£78**	**£0**	**£0**	**£0**	**£0**
Hydrogen heat trials recommendation	Households	+£30	+£164	+£161	+£158	+£156	+£153
	Businesses	+£4	+£22	+£22	+£21	+£21	+£21
	Public sector	+£1	+£5	+£4	+£4	+£4	+£4
	Total	**+£35**	**+£191**	**+£188**	**+£184**	**+£181**	**+£178**
Heat and energy efficiency recommendations	Households	+£108	+£242	+£161	+£158	+£156	+£153
	Businesses	+£4	+£22	+£22	+£21	+£21	+£21
	Public sector	+£1	+£5	+£4	+£4	+£4	+£4
	Total	**+£113**	**+£269**	**+£188**	**+£184**	**+£181**	**+£178**

The contribution from households to the costs of these two recommendations, over the period 2020-2030, totals £1.75 billion. It includes the full additional costs of the illustrative energy efficiency programme for fuel poor households (£780 million) plus that part of the costs of hydrogen trials that is paid over 2020-2030 (£970 million).