Working in partnership to influence the continuation of the Fuel Poor Network Extension Scheme

A Briefing for the GB GDNs prepared by National Energy Action

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Contents

Introduction

NEA[1] is the national fuel poverty charity. We work in partnership with stakeholders across England, Wales and Northern Ireland[2] to ensure that vulnerable and low-income households are able to fully participate in the energy market and live in a warm home. This includes working with representatives from local and national governments, energy suppliers, energy networks, the health sector and housing associations.

Since the implementation of the Warm Homes and Energy Conservation Act 2000[3], the UK Government has had a statutory obligation to set out a strategy for ending fuel poverty in England. Similar obligations also exist for the devolved nations in Great Britain.

Fuel poverty exists for households across a broad spectrum of tenures, heating types, and rurality. One particular area of concern has been those households that do not have a connection to the gas network. Across Great Britain, there are approximately four million households living in fuel poverty, of which at least 650,000 live in homes that are located off the gas grid and fund first time gas central heating. Alleviating fuel poverty is a strategic issue for the UK Government. It can help with reaching net zero targets through improving energy efficiency, and can reduce costs for the NHS. Across Great Britain, there are approximately 17,000 excess winter deaths each year attributable to a cold home, and by ensuring that households that are most at risk of the cold can stay warm in winter, the NHS could save £848m per year.

Off gas households are more likely to be in severe fuel poverty because they heat their homes with more potentially more expensive and polluting fuels. Fuel poor households off the gas grid experience, on average, excess fuel costs of £480 per year, almost triple the average fuel poverty gap of the on-gas fuel poor (£162).

In Great Britain, the Gas Distribution Networks (GDNs) have a Social Obligation to connect fuel poor households to their network at a subsidised cost. These connections are delivered by the GDNs in partnership with other organisations to help tackle fuel poverty by supporting off-grid, fuel poor households to connect to the gas network. Using gas to heat homes is often cheaper than using other fuel types, so this switch is designed to alleviate the impacts of fuel poverty, helping to make warmth more affordable for some of the poorest households.

All GDN's have planned to continue connecting fuel poor households to their network throughout the current price control period, from 2021-2026. These plans have been agreed with Ofgem, who have provided the necessary funding mechanisms for these connections to be paid for. As part of this agreement, GDNs must ensure that all households receiving a connection are eligible for a scheme that can help fund a central heating system (either the Energy Company Obligation (ECO), or Nest in Wales, or the Home Energy Efficiency Programmes in Scotland). Additionally, GDNs must ensure that there is an intention on the part of the householder/landlord to install gas fuelled appliances, including first time central heating.

In February 2021, the UK Government Department for Business, Energy and Industrial Strategy (BEIS) released their new fuel poverty strategy – "Sustainable Warmth". This new strategy has four new strategic principles for tackling fuel poverty, one of which being a sustainability principle. The document states that "As part of our commitment to delivering policies that deliver sustainable outcomes beyond 2030, Government will have a reduced role in supporting the installation of fossil fuel-based heating".

In both the Energy White paper, and the updated Fuel Poverty Strategy, BEIS has committed to extending ECO to 2026. This new iteration of the scheme, ECO4, will continue to be aimed at fuel poor households, and will be expanded, from a current spending envelope of £640m/year to £1bn/year. However, the new sustainability principle in the updated Fuel Poverty Strategy, as well as the proposals within the ECO 4 consultation, call into question whether the scheme will continue to support first time gas central heating.

This briefing paper looks to identify areas where the new iteration of ECO should continue to support first time gas central heating, while still being aligned with the principles set out in the updated Fuel Poverty Strategy. By considering the impacts that the scheme can have on a householder's wellbeing, as well as the positive impacts that can be made on the environment, the paper makes recommendations as to how ECO 4 and the schemes in the devolved nations can be designed to reduce fuel poverty, meet our environmental objectives, and give Ofgem the confidence to continue the funding of the scheme through to 2026.

Background

In order to fully appreciate the value of the Fuel Poor Network Extension Scheme (FPNES) scheme, it is important to understand the history of the scheme, and the opinions of key stakeholders regarding the outcomes that the scheme is looking to achieve. To do this, this section will summarise the history of FPNES, including:

- A summary of the what was achieved in the scheme during the previous price control, RIIO-GD1, which ran from 2013-2021.
- A summary of the approach taken by Westminster and the Devolved Governments to assist with delivering FPNES.
- Views from key stakeholders on the scheme.

These three items will be considered below in turn.

FPNES in RIIO-GD1

The Fuel Poor Network Extension Scheme aims to assist vulnerable customers in switching to natural gas, one of the cheapest sources of energy, by helping towards the cost of connecting to the gas network. It has been running since 2008, and is committed until the current price control, RIIO-GD2, ends on March 31st 2026.

During the last price control, RIIO-GD1, the delivery of FPNES across each network was as follows:

Network	Number of FPNES Connections
Cadent	35,000
SGN	27,498
NGN	15,500
WWU	11,900
Total	**89,898**

NEA estimates that 25% of FPNES delivery[4] to date has resulted in the replacement of high carbon fuels with more efficient gas heating, including the replacement of:

- 10,000 solid fuel heating systems
- 9,000 oil heating systems
- 3,000 LPG or bottled gas heating systems

In each case, the household was left with a new gas central heating system with an enhanced ability to keep warm and well at home. In many cases, households also received energy efficiency measures as well as energy and income advice.

The approach taken by Westminster and the Devolved Governments

Across Great Britain, Governments have taken different routes to support first time central heating, which has been used by GDNs to ensure successful delivery of their FPNES targets. This is summarised in the table below:

UK Government	**ECO 3** Through ECO 3, a scheme delivered by energy suppliers to reduce energy costs in fuel poor homes, funding can be accessed to install first time central heating (FTCH) as well as energy efficiency measures. Funding for FTCH comes with pre-conditions that homes must have cavity wall insulation. There is no cap on FTCH, and BEIS have stated that alongside insulation, it tends to be the best long-term solutions for reducing energy costs and addressing fuel poverty.

	ECO 3 is delivered by the majority of energy suppliers and covers the whole of Great Britain. ECO allows household contributions to be made towards the installation, something that NEA has regularly opposed, and continues to do so.
Scotland	**Home Energy Efficiency Programmes** Through the Warmer Homes Scotland element of the Home Energy Efficiency programmes, support is available for insulation, renewables, and central heating systems. This funding is available for low-income households who are at risk of the impacts of fuel poverty.
Wales	**NEST** The Nest scheme offers a range of free, impartial advice and, if you are eligible, a package of free home energy efficiency improvements such as a new boiler, central heating, or insulation. These improvements are free to qualifying households. Eligibility is based on tenure (social housing residents are excluded), the thermal efficiency of the home and the risk to the household of the impacts of fuel poverty. **Arbed** The Arbed scheme is funded by the Welsh Government and managed by Arbed am Byth. The aim of the scheme is to install appropriate energy efficiency measures (including gas boilers) in properties across Wales, to help people who are struggling to effectively heat their home.

In addition to these three main Government funding streams, a number of additional sources of funding have been used since FPNES started in 2009 in order to ensure that first time central heating can be installed alongside the connection:

- **Warm Front –** An England Only Scheme that provided funding to make homes more energy efficient and our heating bills more affordable. The scheme ended in 2013.
- **The Carbon Emissions Reduction Target (CERT) and Community Energy Emissions Programme (CESP)** – A target for energy companies to reduce carbon emissions from their customers, and a programme to improve domestic energy efficiency in Great Britain's most deprived areas. Both ended in 2012.
- **Green Deal** – A policy to help households make energy-saving improvements to their home and to find the best way to pay for them, including paying through the savings made on energy bills. The scheme in its original form has since ended.
- **DECC Central Heating Fund** – created by BEIS following GDN and stakeholder pressure – provided £25m funding for up to 7,000 new heating systems. The competition ran in 2015 and 2016.
- **National Grid Warm Homes Fund** – A £150m for new gas heating systems and rural solutions and energy advice services. This funding has been provided as a voluntary contribution from National Grid and all projects are due to be completed in 2021.

The UK Government has recently released details of the Sustainable Warmth Competition, providing funding to upgrade fuel poor homes both on, and off, the gas grid. The rules for this competition do not allow first time gas central heating for off gas grid homes, even when in a hybrid solution with a heat pump, meaning that this competition cannot support the delivery of FPNES connections.

Furthermore, the UK Government has recently released its proposals regarding he next phase of the ECO scheme, ECO4. Again, within the proposals, first time gas central heating will not be available for homes that are not connected to the gas network, meaning that in its proposed form, ECO 4 will not be able to support the delivery of FPNES.

Key Stakeholder Views

The UK Government

The UK Government has made several statements regarding the future of the gas network, and support for gas boilers, in the last few years, in particular through the Energy White Paper[5] and Fuel Poverty Strategy.

Energy White Paper

In direct relation to fossil boilers, the Energy White Paper states:

"To achieve net zero emissions, we will have to transition completely away from traditional natural gas boilers for heating homes on the gas grid. There are currently around 1.7 million fossil fuel boiler installations every year but by the mid-2030s we expect all newly installed heating systems to be low-carbon or to be appliances that we are confident can be converted to a clean fuel supply. There is no single technology alternative to fossil fuels."

The Government also makes a number of commitments regarding domestic heat, in particular to:

- Consult on whether it is appropriate to end gas grid connections to new homes, in favour of clean energy alternatives.
- Grow the installation of electric heat pumps from 30,000 per year to 600,000 per year
- Increasing the proportion of biomethane in the gas grid.
- Work in partnership with industry to evaluate hydrogen as an option for heating our homes and workplaces
- Consult on the role of 'hydrogen ready' appliances in 2021.

This implies a default continuation of support for the gas network, with the future of new connections not decided until the consultation exercises have been completed, which is yet to have been done.

Fuel Poverty Strategy

The updated fuel poverty strategy, Sustainable Warmth, was released in early 2021. The Strategy has 3 key elements:

1. Altering the fuel poverty indicator. This moves away from a "Low Income, High Cost" metric, towards a "Low Income, Low Energy Efficiency" metric. This new metric meant that the number of households deemed as living in fuel poverty increased by approximately 750,000.
2. Maintaining the fuel poverty targets and milestones:
    i. The statutory target for all fuel poor households to reach FPEER C by 2030
    ii. Non-statutory milestones for all fuel poor households to reach:
        i. FPEER E by 2020
        ii. FPEER D by 2025
3. Introducing four guiding principles for meeting the fuel poverty target.
    i. Considering whether the principle of "**helping the worst first**" has enough clarity regarding what it means in practice.
    ii. Clarifying what is meant by the "**cost-effective"** principle and what considerations could be made.

iii. Considering whether the "**vulnerability**" principle could be altered to reflect whether it could be based on NICE guidelines so that people who are most vulnerable to living in a cold home can be particularly considered during policy design.

iv. A fourth principle of "**Sustainability**", which aligns the strategy to the net zero agenda.

The updated Fuel Poverty Strategy explicitly mentions the role of support for fossil heating in relation to the sustainability principle:

"Government has committed to phasing out the installation of high carbon fossil fuel heating, in new and existing homes currently off the gas grid during the 2020s, starting with new homes. In line with our new sustainability principle, we do not see a role for new fossil fuel based heating systems being installed as part of a long-term sustainable solution to meeting the 2030 fuel poverty target and building towards the ultimate goal of Net Zero by 2050… We intend to limit our support for new gas heating systems, and remove support for new LPG and oil heating systems, from 2022, supporting households with new fossil fuel based heating systems under very limited circumstances. This would be with a view to supporting fuel poor households to transition to low carbon heating"

Government gives the example a household that has a gas connection but has not previously been able to afford to install a gas central heating system as one of the limited circumstances where support may be available.

Sustainable Warmth Competition

The Sustainable Warmth Competition[6] will award funding to Local Authorities to help them upgrade energy inefficient homes of low income households in England.

The competition encompasses two existing schemes:

- Local Authority Delivery Phase 3 (LAD3): a third phase of the Local Authority Delivery scheme with £200 million available. LAD3 has a refined scope to support low-income households heated by mains gas
- Home Upgrade Grant Phase 1 (HUG1): £150 million for low-income households with homes off-gas grid through the HUG scheme.

Although the priorities listed for the Home Upgrade Grant include both carbon reduction and addressing fuel poverty, the approved measure of a hybrid system is only accessible to those already on the gas network.

Ofgem

As part of the sector specific methodology for RIIO GD2, and subsequently the final determinations of the GDN business plans, Ofgem has agreed that FPNES should continue during the next price control period, up to 31st March 2026. Ofgem said "*We will retain the FPNES as a PCD in RIIO-GD2. We think that the scheme can continue to provide a cost-effective solution to help fuel poor households, pending wider government decisions on the future of heat. We will develop specific scheme requirements, such as how the GDNs should assess whether gas is the best solution for the household, in collaboration with stakeholders. We will also consider how the scheme can be better linked to decarbonisation objectives, for example by allowing district heat or hybrid heat pump connections."*

Ofgem continued "*In addition to the consultation responses, we have considered the government's announcements in the Chancellor of the Exchequer's Spring Statement. This included a proposal to introduce a Future Homes Standard which would future-proof all new homes with low carbon heating from 2025. We still think it is appropriate to continue the FPNES, given the immediate benefits the scheme can provide to fuel poor households. We note that government policy in this area could change before or during RIIO-GD2. We will therefore put in place a re-opener which will retain the flexibility to stop the scheme, if appropriate, in response to developments in government heat policy."*

The Climate Change Committee

The Climate Change Committee (CCC) is an independent, statutory body established under the Climate Change Act 2008. Their purpose is to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change.

In their sixth carbon budget[7], the CCC makes several comments about adjustments to heating homes that need to be made to meet carbon budgets, and ultimately the goal of reaching net zero carbon emissions by 2050. They say, as part of their balanced net zero pathway:

- Natural gas boiler sales should be phased out by 2033 - 100% of heating system sales are low-carbon from 2033, with exemptions for any buildings in zones designated for low-carbon district heat or hydrogen-conversion.
- Oil and coal heating is phased out earlier, by 2028 - 100% of heating system sales off the gas grid are low-carbon from 2028, with exemptions for any buildings in zones designated for low-carbon district heat.
- All new buildings must be zero carbon by 2025 at the latest – implying that by 2025, new build properties should not be connected to a fossil gas grid.

The most ambitious pathways bring these dates forwards by a maximum of two years. There is no mention in this carbon budget of existing homes connecting to the gas grid, implying that connecting those homes is not at odds with meeting the carbon budget.

Citizens Advice

Citizens Advice are the statutory consumer body for energy consumers in Great Britain. They commission research and build evidence-based policy positions to embed the needs of energy consumers into decision-making, with specific regard for the needs of vulnerable consumers.

In their response to the sector specific methodology consultation for RIIO 2 (March 2019), Citizens Advice[8] said:

"We are supportive of the FPNES continuing during RIIO-2 and it being a PCD with company specific targets and penalties for non-delivery against targets. It is still a cost-effective solution to lift households out of fuel poverty. Our support is based on the condition that the targeting rate (currently estimated to be at 30%) is improved and reported against. These connections for fuel poor homes are cross-subsidised by all gas bill payers. To achieve the best value for money, and increase the impact of the scheme by lifting people out of fuel poverty, better targeting is vital…. We will keep our support for FPNES under review for post 2026"

In February 2020, in response[9] to the GDN draft business plan determinations, Citizens Advice stated

"We welcome the continued support of the FPNES scheme to assist those that are off-grid and in fuel poverty".

The Impact of the Fuel Poor Network Extensions Scheme and First Time Central Heating

This section will summarise the impact that FPNES, and Central Heating has had for fuel poor households, and could continue to have if the mechanisms remained in place to continue to deliver it during RIIO-GD2. It will consider:

- The role that First Time Central Heating has in reducing levels of fuel poverty
- The key impacts that the scheme has had on fuel poor households during the scheme so far.
- Some examples, in the form of case studies, showing the difference that the scheme can make to the wellbeing of fuel poor households.
- The views of low-income households in continuing the scheme.

- The commitments made by the GDNs for the current price control period, up to 2026, and what outcomes can be expected to be achieved through these commitments.

The Role of First Time Central Heating

First Time Gas Central Heating can have a profound impact for those households suffering from fuel poverty. The cost per kWh of gas is significantly cheaper that other fossil alternatives, and a gas condensing boiler with central heating offers a significant reduction in carbon emissions when compared to other, non-electric, off gas heating types, as shown in the table below[10].

Fuel	Fuel Costs (£)	Carbon Emissions (kgCO2e)
Gas	593	2496
Electricity	1865	2420
Electricity (Storage Heaters)	1112	2420
Coal	627	5988
Oil	731	4529
LPG	1155	3663
Wood	910	805

Across the nations of Great Britain, there are still a significant number of fuel poor households that live off the gas grid, and do not have access to the cheap fuel, and are often using more polluting fuels.

	Number of Fuel Poor Households	% of Fuel Poor Households	Number of Fuel Poor Households off the gas grid	% of fuel poor households off the gas grid	% of all households off the gas grid
England[11]	3,176,000	13.4%	542,000	17.1%	12.5%
Scotland[12]	619,000	25%	104,000	23%	25%
Wales[13]	155,000	12%	NA[a]	NA	25%[14]

Properties without access to a mains gas connection contain many of the poorest and coldest households in Great Britain. The UK Government's most recent fuel poverty statistics for England highlight this relationship between increased fuel poverty risk and living in an off-gas home.

- Off gas households are more likely to be in severe fuel poverty: because they heat their homes with more potentially more expensive and polluting fuels, fuel poor households off the gas grid experience, on average, excess fuel costs of £480 per year, almost triple the average fuel poverty gap of the on-gas fuel poor (£162).
- The worst performing properties are more likely to be located off the gas grid: Over 80% of F/G rated fuel poor properties (the least energy efficient housing) are off-gas. These homes face excess fuel costs of up to £1,000 per year. This is more than double the average.

Connecting off gas homes without central heating to the gas network and installing first time central heating can have a profound impact on heating costs, helping the householder to keep warm and well all year round. The following sections show how the scheme has helped householders so far.

[a] While there is no data for off gas properties in Wales, the dataset shows that 39% of people living in properties that do not have central heating in Wales are fuel poor.

Key Impacts

The impact of the fuel poor network extension scheme during RIIO GD1 was significant, resulting in large savings in the cost of heating homes, reductions in carbon emitted through domestic heating, and more broadly, increasing the healthiness of the households that received support. During the scheme, NEA estimates[15] that:

- More than 91,000 households saving an average of £600 a year in order to keep their properties at a reasonable temperature year-round. This equates to a total saving of more than £54m/year – a significant saving considering that a boiler should last between 10 and 15 years.
- Approximately one third of households receiving an FPNES connection are solid wall properties. These homes are often the hardest to reach, and the hardest to treat. FPNES has given these homes an opportunity not just to receive a cheaper source of heating, but also access to advice and energy efficiency measures from support schemes such as ECO alongside the heating measure. The current FPNES guidance says that when undertaking an FPNES connection, a GDN or its delivery partner must provide information about:
    - The Priority Services Register (PSR), where the customer may be eligible.
    - The dangers of carbon monoxide (CO) and the need to have all gas appliances serviced and checked regularly by a Gas Safe Registered engineer.
    - Sources from which the customer may obtain additional and impartial information or assistance about improving the energy efficiency of its property (including through government funding) and income maximisation where this could lead to FPNES eligibility.
    - Any appropriate additional sources of help and information, including from independent and impartial sources, helplines, websites, and other appropriate organisations able to offer assistance; and
    - Other government schemes from which the customer may be eligible to receive support.
- An equivalent carbon saving of more than 1 tonne of carbon dioxide per household receiving an FPNES connection per year. This equates to an average saving of 91,000 Tonnes CO2e/year saved throughout the scheme, for the lifetime of the gas heating systems when compared to the previous fuel.
- Approximately 68% of households in receipt of an FPNES connection were in EPC E, F or G before the connection, and that additional measures have saved recipient households more than £14m in lifetime bill savings.
- Approximately 60% of households receiving a gas connection through the scheme had at least one health condition that is exacerbated by being cold at home. In NEA's 'Connecting Homes for Health' project, run with Northern Gas Networks, we found that through targeting households with poor health, the scheme could significantly reduce both physical and mental health conditions for recipients. Pre-intervention, only 13.7% of participant households rated their physical health as either good or very good, and 37% rated their mental health as such. After 9-12 months, 74.4% now rated their physical health as good or very good and the proportion of households that rated their mental health as such remained stable (78.6%).
- In a report conducted by Sia Partners, they concluded that:
    - Stakeholders consider the Fuel Poverty Network Extension Scheme valuable, and their own analysis showed that FPNES offers value for money.
    - The FPNES plays a well-defined, non-overlapping role within the portfolio of government and private schemes aimed at tackling fuel poverty.

Case Studies

The positive Impacts on Health

In partnership with npower's Health Through Warmth scheme, the East Riding of Yorkshire Council helped a client get a new boiler for her property and a winter fuel grant award.

The client, from Withernsea, suffers from significant long-term health conditions and a cold home worsens these conditions. When her previous boiler broke down, she contacted East Riding of Yorkshire Council for their help and advice. The Health Through Warmth co-ordinator then arranged for quotes and the installation of a new boiler.

Owing to the scheme working with a number of charities, the client secured funding from Hospitality Action (based on her past profession in the hospitality industry) and Aid for the Aged in Distress, with both Health Through Warmth and these charities providing funding towards the cost of the works.

The client said: "Not having heating was awful. My health really started to get worse, and I couldn't afford to replace my boiler. I'm so grateful that Health Through Warmth, Hospitality Action and Aid for the Aged in Distress were able to help me. Being warm again is wonderful and such a relief."

The positive Impacts on Affordability and Health

Gillian is well into her 80s, and lives in a small village to the south-east of Barnsley town centre. In early 2020, she was admitted to hospital with severe pneumonia. Even before contracting pneumonia, she lived with skin cancer and a broken back. When we spoke to Gillian, she was sat with her neighbour in her living room – a room which, for the first time in years, was warm.

Years prior, Gillian had no central heating system. Her husband is an ex-miner and suffers from the sadly debilitating effects of Alzheimer's and vascular dementia. Gillian described how for years he refused to look into getting gas central heating, preferring to continue using their coal fire and receiving his coal from the coal board. "*Because he was a miner*", she said, "*he wouldn't let me have it, you see, because he was a miner who used to dig the coal out, it was a thing with him, you know*." Coal was a part of Gillian's husband's identity, but because over the years their mobility around the house declined, the coal-fire became less and less suitable for their needs. "*I broke my back and what not*", Gillian said, "*and we couldn't get down to [the fire]. We couldn't even get the ashes out, so I had to stop the coal being delivered because it was piling up*." As a result, "*the house was freezing […] I was freezing*, *and I got pneumonia.*" Gillian knows that the temperature in her home caused her pneumonia, with which she spent a week in hospital just prior to the Covid-19 outbreak.

In hospital, her caseworker contacted the Warm Homes Service and Hospital Discharge Service. Gillian still has the telephone number of the Service caseworker who she was put in touch with written down on a piece of paper. Once she was safe to leave hospital, she went and stayed with her daughter while the Service swung into action. Scarbrook were instructed to install a new gas central heating system in Gillian's home, and after talking to Gillian they left the old fireplace instead of taking it out. "*My husband built that fireplace, you see, so it's like a memento, really*." Once the work was completed, Gillian was able to move back in and begin recovering properly from her illness.

The impacts of the central heating system have been numerous. It has given her the warmth and control over the levels of heat in her house that she never had before: "*it's been the best thing*", she said, "*it's been the best thing, that gas central heating; it's lovely. It said that if it goes to 15°, it comes on, but I only have the radiators on 1 or 2 because I don't like it brilliantly hot*. *I just like it warmish; you know. It's lovely*." Her bills have reduced too and being able to be warm at home has had a significant impact on how she copes will her illnesses. She is still unwell, but she now finds it much easier to manage. In her own words: "*my health's not good, but it is better, it is better, you know. I've got skin cancer and I've got a broken back, and I can't walk very long and all that, but it is better because I'm warm, I'm warm in the house*."

The Views of Energy Customers and Other Key Stakeholders

As part of their enhanced stakeholder engagement processes that were required to ensure that their business plans met the needs of their customers, each GDN has shown that their customers and stakeholders value the continuation of FPNES in RIIO GD2 relatively highly:

- NGN's[16] Citizens Jury ranked NGN as the most important activity addressing vulnerability to focus on. And when surveying their customers, 43% agreed that the most important thing that NGN should do to "stay community focussed" is to provide free gas connections to those who need it.
- Cadent's engagement[17] with its stakeholders and customers routinely showed support for FPNES, including a view that "Extending the gas network, particularly to rural areas, was firmly prioritised by customers at our deliberative workshop in the North West, with some divided views in North London."
- SGN Stakeholders were keen to see SGN play a role in tackling fuel poverty through FPNES gas connections and partnership working. SGN's stakeholders recognised that there were a number of inherent challenges associated with funding in-house measures in households receiving FPNES connections but were still very supportive of the ambitious connections targets SGN proposed.
- WWU's engagement[18] showed that Local authorities want the FPNES to continue as it provides key funding to support local initiatives such as Warm up Bristol, Warm and Well Cornwall and the Welsh Government NEST and Arbed projects. Their Customer Challenge Group challenged why our GD2 FPNES ambition is lower than it was in GD1.

In addition to these views, NEA has recently commissioned some polling to gather a nationally and politically representative view on the continuation of FPNES. This polling, conducted by YouGov showed:

- 60% of British adults say that it is more important that home heating is made more affordable for the lowest income households, even if it isn't the most environmentally friendly option. 23% say that it is more important that home heating is made environmentally friendly, even if this makes it more expensive for the lowest income households to stay warm at home.
- 37% of British adults say that support should be provided to low-income households to reduce their heating costs, regardless of the carbon emissions. 34% say support should be provided to low-income households to reduce their heating costs but only if it releases less carbon than their current means of heating.

Delivery plans for GD2

As part of the RIIO GD2 business planning process, GDNs have been required to state their ambitions for FPNES connections during the 5-year price control. These are shown in the table below.

GDN	RIIO GD1 Commitments (8 Years)	RIIO GD2 Commitments (5 Years)
Cadent	35,000 (from Customer Vulnerability Strategy)	6,250 FPNES Connections (from BP)
SGN	27,498 (Scotland 17,130 + Southern 10,368)	18,000 (13,000 Scotland, 5,000 southern)
NGN	24,000 (approx 1,000+2,000/year from BP)	5,000 (1,000/year from BP)
WWU	8,000 (1,000/year from BP)	2,500 (500/year from BP)

In total, in RIIO GD2, it is estimated that approximately 31,750 households will receive an FPNES connection to the gas network. GDNs are allowed to exceed this figure up to the connections reached per year during RIIO GD1, while recovering the cost, under the rules within RIIO GD2.

- 13,000 of these will be in Scotland, at most 2,500 in Wales, and up to 19,000 in England. In these nations, there are 132,000 fuel poor households without a gas connection who have an EPC of F/G[19].
- In England, there are 176,000 fuel poor households who use a heating fuel with a higher carbon intensity than natural gas.[20]
- In Wales there are 28,000 fuel poor homes without central heating[21]. In Scotland, 28,000 households in extreme fuel poverty use oil to heat their homes. 33,000 fuel poor households use oil to heat their homes. [22]
- There are 104,000 fuel poor households in Scotland that are not on the gas grid.

If FPNES in RIIO GD2 is delivered in a similar way to RIIO GD1, then it could potentially deliver:

- More than 30,000 households saving an average of £600 a year on their energy bills
- Approximately 10,000 solid wall households receiving a gas connection as well as other measures.
- 30,000 Tonnes CO2e/year saved as a result of the scheme.
- Home upgrades for approximately 20,000 households with an EPC band of E, F or G.
- Lower bills and warmer homes for approximately 18,000 with at least one health condition that is exacerbated by being cold at home.

Recommendations and Conclusions

An Emerging New Context

A new context is emerging that will provide the backdrop for the current Fuel Poor Network Extension scheme. This stems from three things:

- A net zero target for 2050[23]
- A new legal target for 2035[24], giving an interim target to reach net zero by 2050
- New fuel poverty strategies for England[25] and Wales[26] that align with net zero ambitions.

This new context will likely mean that FPNES cannot continue as a scheme with the same design as it has been running, and that there is a need to ensure that it aligns with these goals in order to ensure that it can continue to provide fuel poor households with cheaper sources of heating, so that they can more affordably stay warm and well at home whilst also helping to meet our net zero targets.

As shown above, the scheme has resulted in significant savings of carbon dioxide during RIIO GD1 and is expected to continue saving carbon in RIIO GD2. Care must be taken, however, to safeguard these savings and to ensure that as we move into the next phase of the scheme that it meets the sustainability principle as set out in the UK Government's Fuel Poverty Strategy for England, and the net zero ambitions of the devolved Governments.

In order to do this, the gas industry must respond in order to ensure that FPNES is fit for the net zero future. This is being achieved through decarbonising the gas grid. It can also be done by realigning FPNES to bring it into line with the broader strategy around net zero.

The Industry Response – Decarbonising the gas grid and realigning FPNES

Decarbonising the gas grid

In order to ensure that gas networks are well aligned with net zero ambitions, industry have responded by making commitments to ensure that the gas grid becomes greener, and that in turn, heating our homes becomes less carbon intensive. This has come in the form of biomethane, the use of Hydrogen as a fuel

(including through blending and full hydrogen networks), the support to manufacturers in the development of Hydrogen ready boilers, and hybrid heat pumps. More information on these can be seen in the table below.

Biomethane	Injecting renewable gas (bio-methane) into the local gas networks can make our gas supply less carbon-intensive than using imported natural gas. The UK Government sees biomethane as an important part of reaching their net zero ambitions. In their consultation on "Future support for low carbon heat", they set out proposals for a new Green Gas Support Scheme to increase the proportion of green gas in the grid, through support for biomethane injection, and BEIS estimate that the additional support given to increasing biomethane in the gas grid will save 21.6MtCO2e over the lifetime of the scheme.
Hydrogen as a fuel	The long-term decarbonisation of the GB gas grid involves switching away from Methane and towards Hydrogen for the fuel. This was a key plank of the Prime Minister's 10-point plan for a Green Industrial Revolution. The UK is aiming for 5GW of low carbon hydrogen production capacity by 2030, with the network demonstration in the Levenmouth area of Fife, intended to provide hydrogen to 300 homes over a four-year period. In the shorter term, Hydrogen is planned to be introduced to the gas network by blending it with methane. The 10-point plan says that this could result in a 6% reduction in carbon emissions from the gas grid.
Hydrogen ready boilers	A hydrogen-ready boiler is an appliance that has the ability to burn both natural gas and hydrogen, meaning that it would not need to be changed if the gas grid were to switch from methane as a fuel to Hydrogen. It is expected that hydrogen ready boilers will not be any more expensive than the current natural gas options. The trade body for boiler manufacturers has committed to a 2025 date for all boilers to be hydrogen ready, through a letter to the Prime Minister in February 2021.
Hybrid heat pumps	A hybrid (dual fuel) heat pump system is the combination of renewable heating with a traditional gas system. The hybrid heat pump system switches between energy source, depending on which is the most efficient at any given time. In the latest competitions for local authorities to bid for funding to support low-income households reduce their energy costs, hybrid heat pumps were an allowed heating technology.

Realigning FPNES

As shown above, FPNES often replaces high carbon fuels with gas for heating, a lower carbon alternative than oil, coal and LPG, and the gas grid is on a path of reducing its carbon intensity over the coming decade and beyond. However, a significant proportion of the FPNES scheme has replaced old electrical heating, with new gas boilers. Whilst the inefficiency of the old technology, coupled with periods of higher carbon intensity on the electricity network may produce some limited savings, replacements of this kind are unlikely to result in significant carbon saving in the medium to longer term. While the gas industry is also taking large steps to decarbonise the gas network, the power sector will likely decarbonise more quickly in the next decade, and the carbon deficit in these circumstances will increase. Because of this, continuing to replace electric heating sources with gas connections and gas central heating is unlikely to be aligned with the Fuel Poverty Strategy, or the broader push towards net zero.

Ofgem has already realigned the FPNES scheme to be more aligned with the 'Vulnerability' guiding principle of the updated English Fuel Poverty Strategy through including a health element to the criteria of the scheme, whereby a householder or tenant qualifies for the scheme if they receive Disability Living Allowance; Personal Independence Payment; or Attendance Allowance and occupies a property with an EPC in Band D or below and have a health condition made worse by living in a cold home, such as a chronic respiratory condition, cardiovascular condition, musculoskeletal illness or mental health condition.

The focus of FPNES is therefore likely to be realigned further in order to ensure that connections do not result in a net increase in carbon emissions for households. Below, we make a set of recommendations that would ensure that FPNES can continue to help households save large sums of money on their energy bills, keeping warm at home, improving their physical and mental health, whilst making a positive contribution to meeting our net zero objectives.

Recommendations

In order to ensure that households can continue to enjoy the benefits of FPNES through subsidised first-time central heating, while also ensuring that the scheme is well aligned with broader government ambitions around fuel poverty and net zero, we make two recommendations.

Recommendation 1 – The UK Government to allow First Time Central Gas Heating as part of ECO 4, on the condition that it replaces a more polluting fuel.

GDNs have told us that they mostly rely on funding from the Energy Company Obligation (ECO) to ensure that a home that receives an FPNES connection can also receive a First Time Central Heating installation. The UK Government has signalled that the future iteration of ECO, ECO 4, will not allow First Time Central Heating where a gas connection does not exist, affectively ruling the scheme out of working alongside FPNES.

In order to ensure that FPNES can continue as planned, NEA recommends that the UK Government allows funding for first time central gas heating systems to be installed as part of ECO 4, at a minimum as part of a hybrid system with heat pumps due to the additional carbon savings, when more polluting fuels are being displaced. This funding must come with four conditions:

- Insulation must be installed alongside the FTCH to a standard whereby the household's EPC rating increases by two bands. This would have two impacts:
    - Reducing fuel poverty within a cohort where the fuel poverty gap is significant, and the worst cases of fuel poverty often lie. In England, fuel poor households off the gas grid experience, on average, excess fuel costs of £480 per year, almost triple the average fuel poverty gap of the on-gas fuel poor (£162). The worst properties are more likely to be located off the gas grid: Over 80% of F/G rated fuel poor properties (the least energy efficient housing) are off gas. These homes face excess fuel costs of up to £1,000 per year.
    - Reducing carbon emissions from some of the most polluting homes. An EPC F property that uses an oil boiler emits as much as 3840kgCO2e/year[27]. Converting to natural gas and increasing the energy efficiency of the property to EPC D would result in an estimated gas saving of 1680KgCO2e/year[28]. That represents a saving of 43% in terms of carbon. It would also represent a saving of more than 87% in terms of NOx
- Given the positive impact that FPNES has had on fuel poor households, as evidenced previously in this report, and the recent changes to FPNES targeting to include households with certain health conditions living in EPC D homes, ECO 4 should be designed to complement this targeting methodology so that FPNES and ECO 4 can be successfully combined to reach desirable outcomes for those households with a health condition that is impacted by living in a cold home.
- Funding should only be available where carbon savings can be achieved. This means that while first time central heating should be available for households currently using oil, coal, or LPG to heat their homes, funding should not be available where gas heating would displace functioning, efficient electrical heating.

- Funding should be set at a level so that households do not need to make a voluntary contribution towards the costs, so that households do not have to contribute towards the installation, negating some of the positive impact it can have on alleviating fuel poverty

Recommendation 2 – Ofgem should continue to allow FPNES to continue during the current price control, regardless of the future of ECO4.

As part of the sector specific methodology for RIIO GD2, and subsequently the final determinations of the GDN business plans, Ofgem has agreed that FPNES should continue during the next price control period, up to April 2026, with a reopener available which retains flexibility to stop the scheme, if appropriate, in response to developments in government heat policy." NEA notes that the Government, to date, has not set out plans to ban gas boilers or gas heating, and has repeatedly said that gas boilers will not be "ripped out" as part of plans to decarbonise heat. Customers who receive an FPNES connection will see the benefits of cheaper heating and we have shown that this can be achieved alongside carbon reductions if replacing electrical heating can be avoided in the scheme. Furthermore, we have shown that gas boilers can be funded using sources other than ECO, especially in Scotland and Wales where there are additional funding mechanisms within their respective fuel poverty schemes. Local Authorities, social and private landlords and other more general disability/vulnerability funds can also help to fund gas boilers.

Additionally, through their business planning for RIIO GD2, each GDN obtained significant evidence that their customers supported the continuation to the FPNES scheme. Our new polling, completed for this report, shows that support for the scheme has not diminished since the UK has made extra commitments to reach net zero carbon emissions by 2025, and achieve a 78% reduction in emissions by 2035.

Therefore NEA recommends that Ofgem retains the Fuel Poor Network Extension Scheme at least until the end of RIIO GD2.

Conclusions

Within this briefing, it has been shown that the value of the Fuel Poor Network Extension Scheme has been significant during RIIO GD1, with:

- More than 91,000 households saving an average of £600 a year in order to keep their properties at a reasonable temperature year-round. This equates to a total saving of more than £54m/year
- Approximately one third of households receiving an FPNES connection are solid wall properties. These homes are often the hardest to reach, and the hardest to treat. FPNES has given these homes an opportunity not just to receive a cheaper source of heating, but also access to advice and energy efficiency measures from support schemes such as ECO alongside the heating measure.
- An equivalent carbon saving of more than 1 tonne of carbon dioxide per household receiving an FPNES connection per year. This equates to an average saving of 91,000 Tonnes CO2e/year saved throughout the scheme.
- Approximately 68% of households in receipt of an FPNES connection were in EPC E, F or G before the connection, and that additional measures have saved recipient households more than £14m in lifetime bill savings.
- Approximately 60% of households receiving a gas connection through the scheme had at least one health condition that is exacerbated by being cold at home, and the impacts of these conditions being improved significantly as a result of the scheme.

These impacts are due to be extended into RIIO GD2, if appropriate funding can be maintained to support the installation of first time central heating alongside the new connection and NEA hopes that the findings of this report are able to influence the policy debate. Specifically, the report recommends that this should be done in line with our climate commitments, and that first time central heating should be continued to be funded for fuel poor households in ECO 4, where it is replacing a high carbon source of heating and is installed

alongside fabric efficiency measures so that the household is improved by two EPC bands. The report also recommends that Ofgem retains the Fuel Poor Network Extension Scheme at least until the end of RIIO GD2.

NEA would value further work with the GDNs within GD2 to also deliver wider practical support via VCMA and willing to work with GDNs to better define their obligations/role regarding fuel poverty after the current price control ends in March 2026.

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[1] For more information visit: www.nea.org.uk.

[2] NEA also work alongside our sister charity Energy Action Scotland (EAS) to ensure we collectively have a UK wider reach.

[3] The Warm Homes and Energy Conservation Act 2000, UK Government, 2000 https://www.legislation.gov.uk/ukpga/2000/31/contents

[4] Based on a sample of recent FPNES installations in the Wales and West Utility, Scotia Gas Networks and Northern Gas Networks areas

[5] Energy White Paper, UK Government Department for Business, Energy and Industrial Strategy, 2021 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf

[6] Sustainable Warmth Competition, BEIS, 2021 https://www.gov.uk/government/publications/apply-for-the-sustainable-warmth-competition

[7] Sixth Climate Budget, Climate Change Committee, 2020, https://www.theccc.org.uk/publication/sixth-carbon-budget/

[8] RIIO-2 Sector specific consultation response, Citizens Advice, 2019 https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/Energy%20Consultation%20responses/2Citizens%20Advice%20-%20RIIO2%20sector%20specific%20response%20-%20March%202019.pdf

[9] Ofgem consultation on RIIO-2 Draft Determinations Sector and Company Specific Sections – Citizens Advice Response, Citizens Advice, 2020 https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/SECTOR%20AND%20COMPANY%20SPECIFIC%20CA%20response%20-Ofgem%20Draft%20Determinations%20T%20and%20GD%204-9-2020%20-%20FINAL_PUB.pdf

[10] These figures are calculated using data from several sources:

- Fuel costs are taken from the Energy Savings Trust (EST) website https://energysavingtrust.org.uk/about-us/our-data/
- Carbon emissions factors are taken from official BEIS statistics https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021
- The efficiency of heating sources is assumed at 75% for fossil boilers being replaced, 95% for new gas boilers, and 100% for electric heating being replaced.
- Heating requirement is set at 12,000kWh/year for a new gas boiler, as the medium typical domestic consumption value for heating.

[11] Fuel poverty detailed tables under the Low-Income Low Energy Efficiency (LILEE) and the Low-Income High Costs (LIHC) indicators (2019 data), BEIS, 2021, https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2021

[12] Scottish house condition survey: 2018 key findings, Scottish Government, 2020 https://www.gov.scot/publications/scottish-house-condition-survey-2018-key-findings/pages/6/

[13] Fuel poverty estimates for Wales: 2018, Welsh Government, 2019 https://gov.wales/fuel-poverty-estimates-wales-2018

[14] Figure provided by Wales and West Utilities

[15] These estimations are based on data provided by the four GDNs in Great Britain on a sample of their delivery of the FPNES scheme in RIIO GD1.

[16] https://www.northerngasnetworks.co.uk/wp-content/uploads/2019/12/A4-NGN-RIIO-2-Stakeholder-Engagement-Insights.pdf

[17]Appendix 07.03.00 – Customer Vulnerability Strategy, Cadent, 2019 https://cadentgas.com/nggdwsdev/media/Downloads/business-plan/APP_CAD_07-03-00-Customer-Vulnerability-Strategy.pdf

[18] A sustainable business in a changing and dynamic sector, Wales and West Utilities, 2019 https://www.wwutilities.co.uk/media/3567/3-wwu-business-plan-december-2019.pdf

[19] Fuel Poverty Detailed Tables 2021, Table 10, BEIS, 2021 https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2021

[20] Fuel Poverty Detailed Tables 2021, Table 13, BEIS, 2021 https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2021

[21] Fuel poverty estimates for Wales, 2018:revised, Table 4.3.1, Welsh Government, 2018

[22] Scottish house condition survey: 2018 key findings, Scottish Government, 2018 https://www.gov.scot/publications/scottish-house-condition-survey-2018-key-findings/pages/6/

[23] On 27th June 2019, the UK passed legislation for a target to reach net zero carbon emissions by 2050 https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law

[24] On 20th April 2020, the UK Government passed new legislation for a target to cut carbon emissions by78% by 2035, compared to 1990 levels https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035

[25] The updated Fuel Poverty Strategy for England, "Sustainable Warmth" includes a 'Sustainability' principle, which states that fuel poverty policies should be aligned with net zero.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/960200/CCS207_CCS0221018682-001_CP_391_Sustainable_Warmth_Print.pdf

[26] The updated Fuel Poverty Strategy for Wales, "Tackling fuel poverty 2021 to 2035", has four goals, one of which is to 'Decarbonise'. https://gov.wales/tackling-fuel-poverty-2021-2035-html

[27] A property with an EPC of F, using Burning Oil has a mean heating demand of 16,000kWh. 1kWh of burning oil emits 0.24kgCO2e, meaning that in total, emissions are 3840kgCO2e per year.

[28] A property with an EPC of D, using natural gas for heating il has a mean heating demand of 12,000kWh. 1kWh of gas 0.18kgCO2e, meaning that in total, emissions are 2160kgCO2e per year.