NORWICH City Council

Climate and environment emergency executive panel

Date: Thursday, 18 February 2021
Time: 09:00
Venue: Meeting will be held remotely

Committee members:*

Councillors:
Maguire (chair)
Stonard (vice chair)
Carlo
Giles
Lubbock
McCartney-Gray
Osborn

For further information please contact:

Committee officer: Jackie Rodger
t: (01603) 989547
e: jackierodger@norwich.gov.uk

Democratic services
City Hall
Norwich
NR2 1NH

www.norwich.gov.uk

Information for members of the public

Members of the public and the media have the right to attend meetings of full council, the cabinet and committees except where confidential information or exempt information is likely to be disclosed, and the meeting is therefore held in private.

For information about attending or speaking at meetings, please contact the committee officer above or refer to the council's website

IN TRAN communication for all

If you would like this agenda in an alternative format, such as a larger or smaller font, audio or Braille, or in a different language, please contact the committee officer above.

Agenda

		Page nos
1	**Apologies** To receive apologies for absence	
2	**Declarations of interest** (Please note that it is the responsibility of individual members to declare an interest prior to the item if they arrive late for the meeting)	
3	**Minutes** To approve the accuracy of the minutes of the meeting held on 17 December 2020	3 - 6
4	**Home Energy Conservation Act Report 2021** **Purpose -** The draft HECA report sets out the energy conservation measures that the authority considers practicable, cost-effective and likely to result in significant improvement in the energy efficiency of residential accommodation in its area in line with government requirements.	7 - 86

Date of publication**: Friday, 12 February 2021**

NORWICH City Council

MINUTES

Climate and environment emergency executive panel

09:00 to 10:55 **17 December 2020**

Present: Councillors Maguire (chair), Stonard (vice chair), Carlo, Lubbock, McCartney-Gray and Osborn

Apologies: Councillor Giles

1. Declarations of interest

There were no declarations of interest.

2. Minutes

RESOLVED to approve the accuracy of the minutes held on 1 July 2020.

3. Natural Capital Evidence Compendium Norfolk and Suffolk November 2020 – presentation

(Professor Andrew Lovett, University of East Anglia (UEA), attended the meeting for this item.)

The chair introduced Andrew Lovett and explained that the council would be considering its biodiversity strategy in the near future.

Andrew Lovett by way of introduction said that he had been born locally and that he was a geographer, working in the School of Environmental Sciences, UEA. His specialism was in geographic information systems (GIS, a computer system to map data). The presentation (available on the council's website) provided an introduction to the content and form of the Natural Capital Evidence Compendium Norfolk and Suffolk.

The chair thanked Andrew Lovett for his presentation and invited him to attend a meeting of the panel to update the panel on the progress of the plan in 12 months' time. Andrew Lovett confirmed that he would be happy to do that. He considered that the partner organisations had put a good environmental plan in place but it would need regular updating over the 25 years covered in the plan.

Following the presentation, members of the panel had the opportunity to ask Andrew Lovett questions. Members welcomed the plan and considered it to be a "comprehensive", "brilliant" and "unique" piece of work.

The panel's questions are summarised with Andrew Lovett's answers below:

- **Given the complex partnership arrangements and ambitions of the plan, how could partner organisations align strategies and ensure its delivery?**

This question identified one of the key challenges to the plan. The steering group for the project comprised representatives from the local authorities, New Anglia Local Enterprise Partnership (LEP), Wildlife Trust and the National Farmers' Union with diverse interests. The plan had not been straightforward to produce but there was a willingness to make it happen and an opportunity to do things differently, in the context of the climate and environmental emergencies, that had not been there five years' ago. The UEA would support the implementation of the plan as it was a resource base for the partner organisations with its strong multi-disciplinary science departments and expertise in running social engagement.

- **The East of England Regional Assembly compiled data on the environment across the six counties and had met regularly with environmental groups (RSPB, Natural Trust, Wildlife Trust, water companies and the farmers' unions) and was a forerunner of this environmental plan. The work had been lost with the abolition of the regional assemblies. The baseline had raised awareness but had not informed policy development. Will this evidenced plan influence urban development and transport planning? Wildlife East proposed that 25 per cent of land was put aside to increase natural capital.**

There would be a lot of changes to farming in the next year in accordance with proposals set out in the Environment and Agriculture Bills and opportunities for landowners and landlords to apply for funding for environmental schemes. The plan would provide the evidence base for funding for these environmental beneficial schemes.

In terms of geography, the plan provided evidence based on landscapes rather than geographical pockets of land, and enabled a joined up approach taking into account the interests of all organisations.

- **How can the county council be held to account to ensure that transport policies improve air quality in the city?**

The evidence base was important and powerful. The GIS mapping provided better information than was available five years' ago, and could demonstrate the levels of greenhouse gases and air pollution.

- **Baseline evidence was shifting but it was also about regeneration. There had been a general abundance of wildlife that had declined over the last fifty to one hundred years.**

The key elements of a plan for 25 years was to establish a set of indices to assess biodiversity and to provide a better framework for managing change.

- **A lesson learnt during the lockdown was that the wards in the city with the greatest levels of deprivation had the least access to green spaces.**

There was more data on green infrastructure available from the Ordnance Survey and official national statistics than there was three years' ago, which meant that small urban areas could now be mapped and provide evidence to address the need for green spaces.

- **How does the plan meet the trinity of "environment, society and economy" to be a balanced sustainable policy?**

The plan incorporated a wide range of interests and disciplines. Andrew Lovett was a geographer, experienced in human and economic geography and his work on this project surprised some of his colleagues who were experts on environmental issues. The LEP was primarily focused on economic development but interested in environmental issues for that to be sustainable. This connectivity was fundamental to the management of the counties' natural capital assets.

In terms of the implementation of transport, planning and other policies; it was necessary to work across administrative boundaries and take a holistic view of the landscape of the area, for instance, avoiding making a distinction of the coast and separating it from the landscape, and "building bridges" between different interests and organisations.

RESOLVED to

(1) thank Professor Andrew Lovett for his presentation and attending the meeting;

(2) note that the compendium will be available in the public domain and will be a useful resource to inform the development of the council's policies;

(3) ask members who have questions on the plan, to email the environmental strategy manager.

(The committee had a short break at this point and reconvened with all members listed above as present.)

4. Carbon Footprint Report 2019 -20

The environmental strategy manager and environmental strategy officer presented the report and, together with the director of place, answered members' questions.

In reply to questions on achieving the council's targets, the environmental strategy manager explained that carbon offsetting was being used for the first time to support plans to achieve net zero by 2030. This was in recognition that it was now more difficult to go on having carbon reductions year on year as the council had been doing it for 12 years. Retrofitting of City Hall and the Halls was constrained by the building fabric of these listed buildings but technological advances in battery storage and hydrogen use could be developed and would reduce carbon use.

The director of place explained that for financial reasons the council would not be able to electrify the fleet immediately when taking over the joint ventures. He advised members that the new depot had been designed to deliver environmental

excellence. Following an ecological study of the site, there would be a damp area for amphibians, including newts, bat boxes and fruit trees, as well as providing facilities such as cycle parking and showers for staff use, advanced LED lighting and solar panels funded by the Public Sector Decarbonisation Scheme fund. Battery storage would be taken forward in the next financial year.

Members were advised that in relation to sheltered housing, the proposal was to improve the fabric of sheltered housing and to replace gas boilers with more sustainable heating sources.

A member congratulated the environmental strategy team for their work in reducing carbon emissions.

Members were advised that the reduction in carbon emissions was being built into the council's contracts and this work was ongoing.

During discussion the director of place commented on the changes to working patterns this year, with more employees working at home and online meetings and that this had reduced the council's carbon footprint. It was probable that operations would be different in future years and the council was currently undergoing a transformation programme to reshape the way that it delivered services. This included an opportunity to reduce the council's carbon footprint through the review of the council's asset management strategy over the next seven years.

RESOLVED to note the report.

5. Future work programme

The chair asked members to email him with any topics that the members of the panel potential items for discussion at future panel meetings.

RESOLVED to ask members to email potential items for discussion at future panel meetings to the chair and environmental strategy manager.

CHAIR

Report to	Climate and environment emergency executive panel 18 February 2021	**Item**
Report of	Environmental strategy manager	4
Subject	Home Energy Conservation Act Report 2021	

Purpose
The draft HECA report sets out the energy conservation measures that the authority considers practicable, cost-effective and likely to result in significant improvement in the energy efficiency of residential accommodation in its area in line with government requirements.

Recommendation

To approve the 2021 HECA report for submission to BEIS

Corporate and service priorities
The report helps to meet the corporate priority Great neighbourhoods, housing and environment

Financial implications
None

Ward/s: All Wards

Cabinet member: Councillor Davis - Social inclusion

Contact officers

Rachel Sowerby, Affordable Warmth Officer 01603 989578

Background documents
None

Report

1. The Home Energy Conservation Act (HECA) 1995 requires all 326 local authorities in England to submit reports to the Secretary of State for Business, Energy and Industrial Strategy demonstrating what energy conservation measures they have adopted to improve the energy efficiency of residential accommodation within the local authority area.
2. The current HECA report was covers the period 2019-21 and was approved by Cabinet in July 2019.
3. Since the introduction of the Home Energy Conservation Act we have run a wide range of programmes and projects to promote energy efficiency to our residents. This report outlines how we will continue to develop this work over the next two years.

4. Over the past two years, since our previous HECA report, Norwich City Council has achieved the following:
    - A further 2000 residents have switched with our Big Switch and Save scheme, with average savings of over £200. Overall over 6000 residents have switched with this scheme. Our collective switching scheme now offers 100% renewable electricity as standard
    - Over 200 energy efficiency measures, from home insulation to small scale interventions, distributed to private sector homes through our Cosy City scheme.
    - Continued work to make our council housing stock energy efficient. The current average SAP rating of the council's housing stock is 70.9, compared to the national average of 65.
    - Two further collective solar purchasing schemes, the second of which included battery storage. Overall our Solar Together schemes have installed over 2MW of solar power in Norwich.
    - A further One Planet Norwich festival engaging over 6,000 visitors
    - From April 2019 to March 2020 a reduction of 2.5% in the council's carbon footprint was achieved. Carbon emissions have reduced 62.1% since 2007.
    - We have continued our work with the Warm Homes Fund to deliver first time central heating in Norwich, in particular the Templemere estate. 75 homes on the Templemere estate have had grants approved, with, as of January 2021, 42 installed. We expect all installations to be completed by May 2021. Overall £322,535.34 has been invested into this estate, plus £800,000 in installing new mains gas lines throughout the estate.

5. In Norwich fuel poverty has decreased since our HECA was last published. 11.1% of households in Norwich are fuel poor.

6. The reduction of fuel poverty is vital to improve the health of the local community, enhance prosperity and improve the housing stock. Our programme of activities will, we hope, be assisted by a combination of government funding, other ad hoc funding schemes and our own funding.

7. Central government currently aims to upgrade as many fuel poor homes as is reasonably practicable to Band C by the end of 2030. The Government has indicated they are committed to this target, and believe it can be achieved.
8. However, the Committee on Fuel Poverty disagrees, estimating a cumulative funding gap of £17.1 billion to meet the 2030 target. .
9. We believe that, if we were retrofit all homes below C in Norwich just with wall and loft insulation this would cost £295 - £511 million in total (depending on the type of wall insulation) with a payback period of 20 - 35 years. However, some homes will need further works.
10. This government ambition is not matched by the funding made available to local government. Nevertheless BEIS recognises that local authorities are well placed to take the lead on this agenda, but this will require a skilled workforce and appropriate levels of funding.
11. This HECA report provides a framework to bring together in one document a number of housing improvement activities which will help to reduce fuel poverty, improve health and increase the energy efficiency of city homes.
12. Improving energy efficiency in homes is likely to lead to a reduction in domestic energy use.
13. Reducing domestic energy use has important environmental, social and economic benefits and therefore contributes to Norwich City Council's corporate priorities.
14. Throughout the period of our report (2021-2023) we will continue to work to make council homes energy efficient and, with private sector housing, continue to remove excess cold hazards in private rented homes. Our Cosy City scheme will take advantage of all available funding to maximise possible interventions in the private sector.
15. We are proud of the progress we have made so far in reducing Norwich's carbon emissions and work to tackle fuel poverty and we are committed to continuing this in the future. However, we recognise that we need to be realistic and understand that we are operating in times of financial insecurity where future funding streams are not guaranteed. Whilst we continuously seek new opportunities we cannot be complacent that current funding streams will continue to be available to us. We must remain realistic in our aspirations with what we can deliver with decreased resources.
16. We also know that the COVID-19 pandemic will likely impact on future fuel poverty reporting due to loss of income. In the UK almost six million adults have fallen behind on their energy bills due to the pandemic.

Norwich City Council Home Energy Conservation Report 2021 - 2023

1. Section 1 - Foreword:

1.1 Reducing energy use has important environmental, social and economic benefits and therefore clearly contributes to Norwich city council's corporate priorities. It also helps to meet both national and international targets to reduce carbon dioxide emissions.

1.2 Increasing the energy efficiency of homes can also work to reduce fuel poverty.

1.3 The council has been working hard to try to combat fuel poverty across the city and to mitigate the effects of fuel poverty wherever possible. While fuel poverty has not increased since 2011, and there has been a decrease since our last report, the council is not complacent, with 11.1% of homes in Norwich being fuel poor. Clearly there is still more to do.

1.4 There appears to be a disconnect between the government's ambition to improve the energy efficiency of all fuel-poor homes to a decent band C level and the amount of money being spent on the issue. However, as government funding has dwindled over time the council continues to work tirelessly to pursue alternative funding options to enable us to continue to deliver this important work and ultimately to reduce fuel poverty in Norwich. We must, however, remain realistic in our aspirations with what can be delivered with decreased resources.

1.5 The reduction of fuel poverty is vital to improve the health of the local community, enhance prosperity and improve the housing stock. Our programme of activities will be assisted by a combination of government funding, other ad hoc funding schemes and our own funding. The council will continue to work to improve the housing stock in Norwich (both private and social), in order to increase energy efficiency across Norwich.

1.6 Since the introduction of the Home Energy Conservation Act the council has run a wide range of programmes and projects to promote energy efficiency to our residents. This report outlines how this work will continue to develop over the next two years.

1.7 The Covid-19 pandemic has of course impacted both Norwich City Council and the city of Norwich. Although we have continued to work to support our residents who may be struggling with fuel bills many residents have become at risk of fuel poverty due to the impact of the Covid-19 pandemic and this will have an impact on fuel poverty reporting in the future.

2 - Executive Summary:

Aim:

2.1 The Home Energy Conservation Act 1995 (HECA) recognises that local authorities are well placed to use their position to seek to improve the energy efficiency of residential accommodation within their local communities. HECA updates are required bi-annually and this report provides an update on the work undertaken since the publication of Norwich City Council's 2019 HECA report.

2.2 This HECA report is written in accordance with the HECA guidance published by the Department of Business, Energy and Industrial Strategy (DBEIS) in January 2019, titled: Guidance to English Energy Conservation Authorities issued pursuant to the Home Energy Conservation Act 1995. The full report submitted to DBEIS can be found in Appendix I.

Structure of the report:

2.3 Firstly the report considers the age and condition of the city's housing stock, both privately and council owned.

2.4 Section 6 considers carbon emissions and energy consumption in the city, before moving to review Fuel Poverty levels and an exploration of the complex factors which make pinpointing causes of fuel poverty challenging in different areas of the city in Section 7.

2.5 Section 8 reports the various initiatives that the council has undertaken to help reduce both carbon emissions and fuel poverty across Norwich.

2.6 The report concludes by considering progress against actions set over the past 6 years and finishes by detailing future plans to continue to reduce fuel poverty and carbon emissions in Norwich, alongside the need to be realistic in our aspirations in financially challenging times.

Contents

Section 3 - Introduction:

3.1 Norwich city council is responsible for approximately 60% of the urban area of greater Norwich, including the historic city centre and a population of approximately 143,000 residents.

3.2 Norwich is an innovative, creative and vibrant city, with big ambitions for both the place and the people who live here. The first UNESCO City of Literature in England, Norwich is flourishing. Its economic, social, cultural and environmental influence is out of all proportion to its size, and extends far beyond its boundaries.

3.3 However, Norwich is a 'tale of two cities'. Whilst the city has many positive features, it nevertheless experiences many of the tough challenges that urban centres can suffer. A significant proportion of city residents suffer deprivation, poor educational attainment and poor health. Norwich is also a growing city, which puts demands on ever diminishing public sector resources, both now and in the future.

3.4 Significant proportions of Norwich residents have low-literacy levels and are lacking basic digital skills or internet access. All of which can impede access to some of the most competitive deals on a range of products from car insurance, mobile telephones and energy tariffs. The impact of financial recession and welfare reforms has only served to increase the challenges for disadvantaged residents.

3.5 Our corporate priorities include 'People living well', which includes a commitment to 'build on progress made over recent years in tackling fuel poverty in the city'. Under the priority 'Great neighbourhoods, housing and environment' we are looking to 'ensure our services mitigate against any adverse effects of climate change and are efficient to reduce carbon emissions' and 'improve the quality and safety of private sector housing'. This HECA report provides a framework to bring together in one document a number of housing improvement activities which will help to reduce fuel poverty, improve health and increase the energy efficiency of city homes.

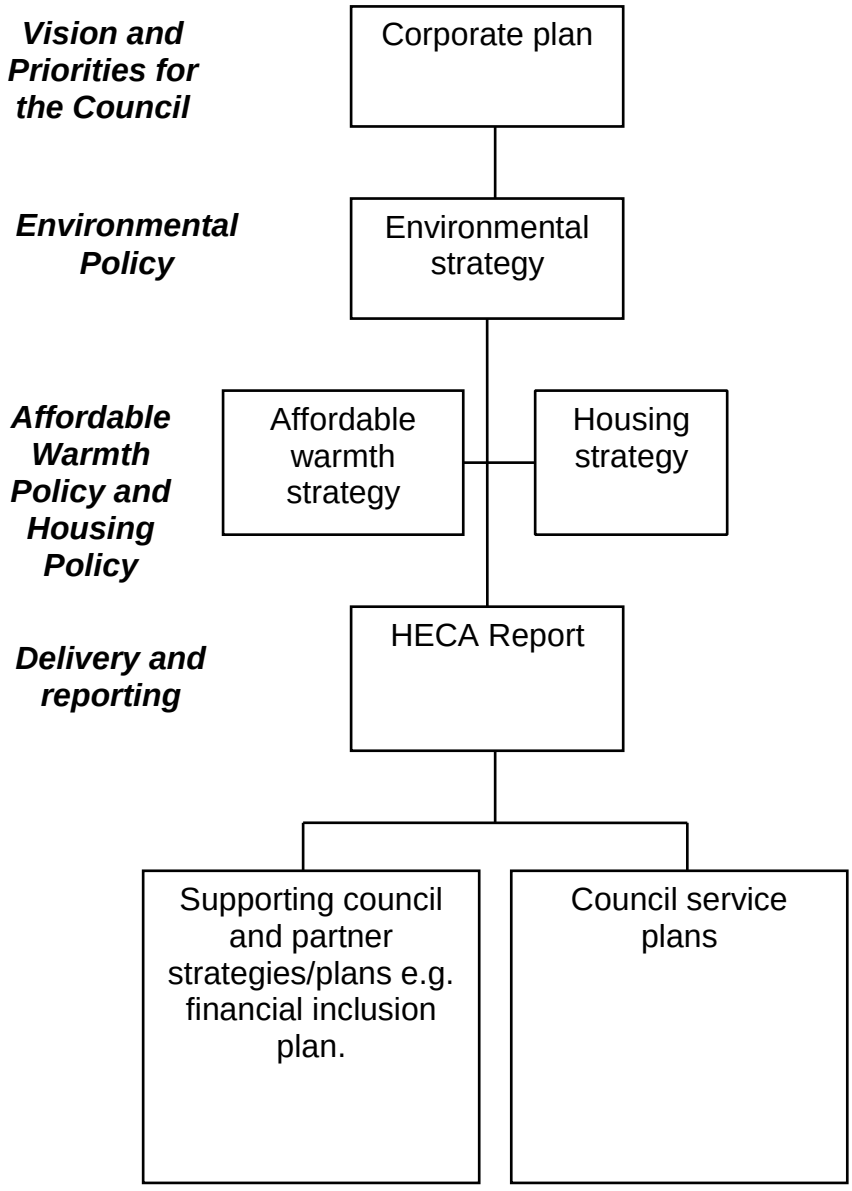
3.6 11.1% of all Norwich households still live in fuel poverty, which equates to over 7,100 households. This is a reduction from our previous HECA report but we will continue to work to decrease this even further. The council has also seen the impact that COVID-19 has had on the city and its residents and sadly it will continue to impact people's livelihoods. In the UK almost six million adults have fallen behind on their energy bills due to the coronavirus pandemic.

3.7 The Secretary of State for Business, Energy and Industrial Strategy requires all English authorities to prepare an update on HECA reports by 31 May 2021, setting out the energy conservation measures that the authority considers practical, cost-effective and likely to result in significant improvements in the energy efficiency of residential accommodation in the city.

Section 4 - Strategic framework:

4.1 The diagram below sets out how the HECA reports fit in with other key strategies, policies and plans:

Strategic framework for HECA report



4.2 Our current Environmental Strategy is available on our website: https://www.norwich.gov.uk/download/downloads/id/1092/environmental_strategy.pdf

Section 5 - Current position in Norwich

Properties and condition of the housing stock

5.1 In 2014 the council commissioned the Building Research Establishment Ltd (BRE) to provide information on key housing and domestic energy variables, with a focus on private sector housing. The information has been derived from a series of models which make use of the Experian UK Consumer Dynamics database using a range of statistical methods. This supersedes the traditional private sector stock condition survey published in 2006.

5.2 The tables below show the years in which Norwich properties were built, both council stock and privately-owned stock:

Council Stock	Total
Pre 1918	48
1918 - 1929	519
1930 - 1949	4,703
1950 - 1963	3,969
1964 - 1974	4,017
1975 - 1982	1,607
1983 - 1990	774
1991 - 1997	27

Private Stock	Total
Pre 1919	14,867
1919 - 1939	7,740
1940 – 1963	5,371
1964 - 2001	10,426

5.3 In total, 54,068 properties were built between 1919 and 2001; 15,664 council dwellings and 38,404 in the private sector. The largest majority of council stock being built between the 1930's to the 1970's, whilst in the private sector 38.7% of stock was built pre-1919, or before the introduction of cavity walls to housing design.

5.4 The 2014 BRE stock modelling highlights the following key facts shown in the maps and table below:

Condition of Private Stock:

5.5 The Housing Health and Safety Rating System (HHSRS) identifies 29 potential housing hazards and their health effects. If a hazard is a serious and immediate risk to a person's health and safety, this is known as a Category 1 hazard. If a hazard is less serious, or less urgent, this is known as a Category 2 hazard.

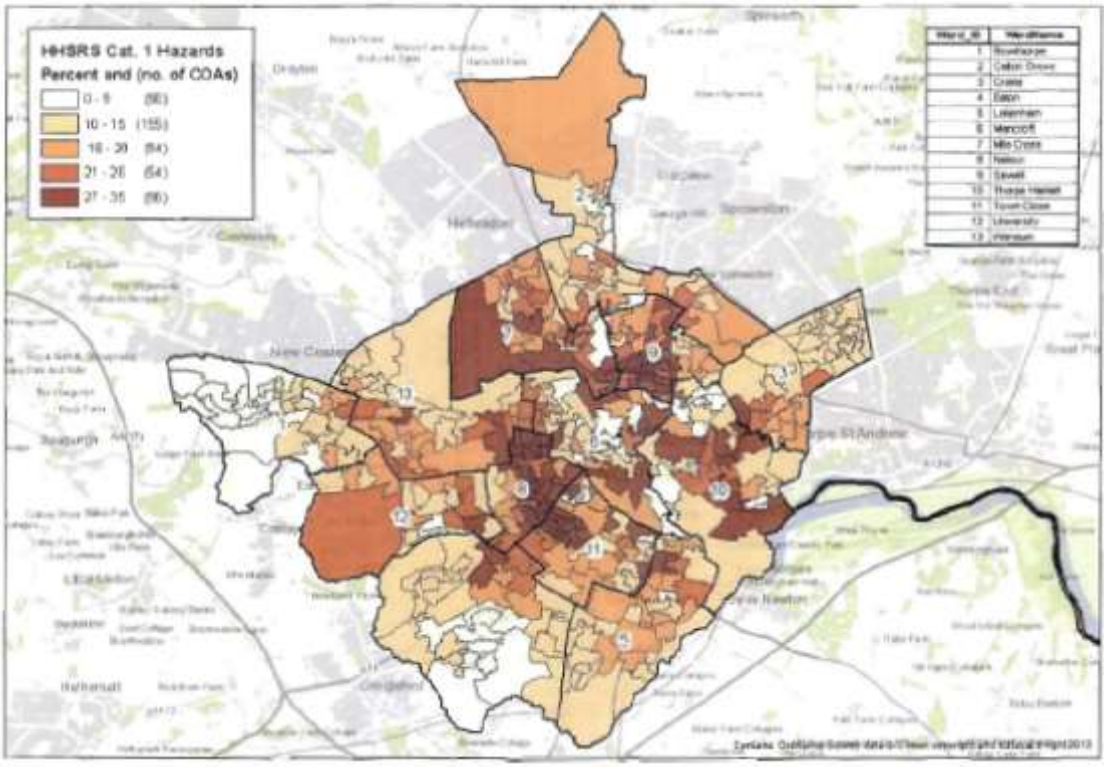
5.6 One of the potential housing hazards has been identified as Excess Cold which relates to threats to health from cold indoor temperatures. It is known that Excess Cold can bring about respiratory conditions such as: flu, pneumonia and bronchitis and cardiovascular conditions such as heart attacks and strokes.

5.7 There is an estimated 1,676 private sector dwellings with a Category 1 level of Excess Cold. Or, of the 7,981 private dwellings predicted to have a Category 1 hazard, one fifth of them will have a serious and immediate risk to the tenants' health due to excess cold.

5.8 This is borne out by the average Private Sector Standard Assessment Procedure (SAP) rating of 63 across Norwich - lower than our stock. SAP ratings and their purpose will be discussed in more detail later in the report.

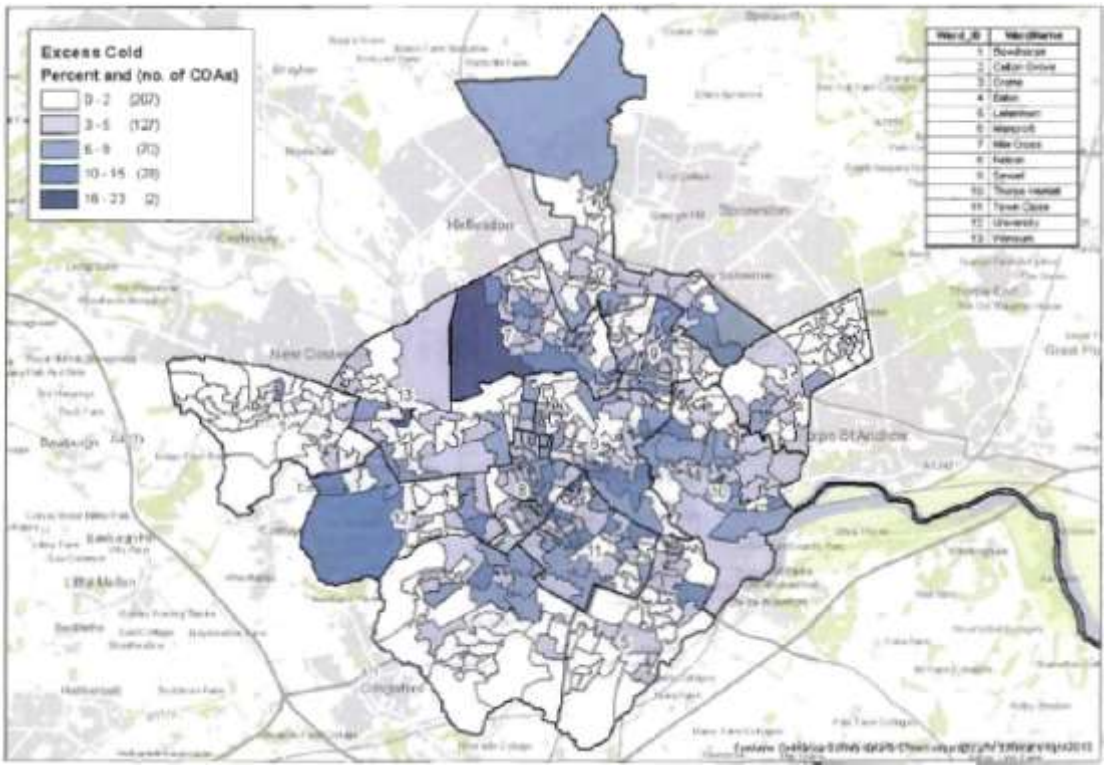
5.9 Map 1 (below) highlights the areas of the city where Category 1 hazards have been identified. The darker the colour, the greater the concentration of properties.

Map 1 – Category 1 hazards:



5.10 Map 2 (below) highlights specifically where Category 1 Excess Cold hazards have been identified. The darker the colour, the greater the concentration of dwellings.

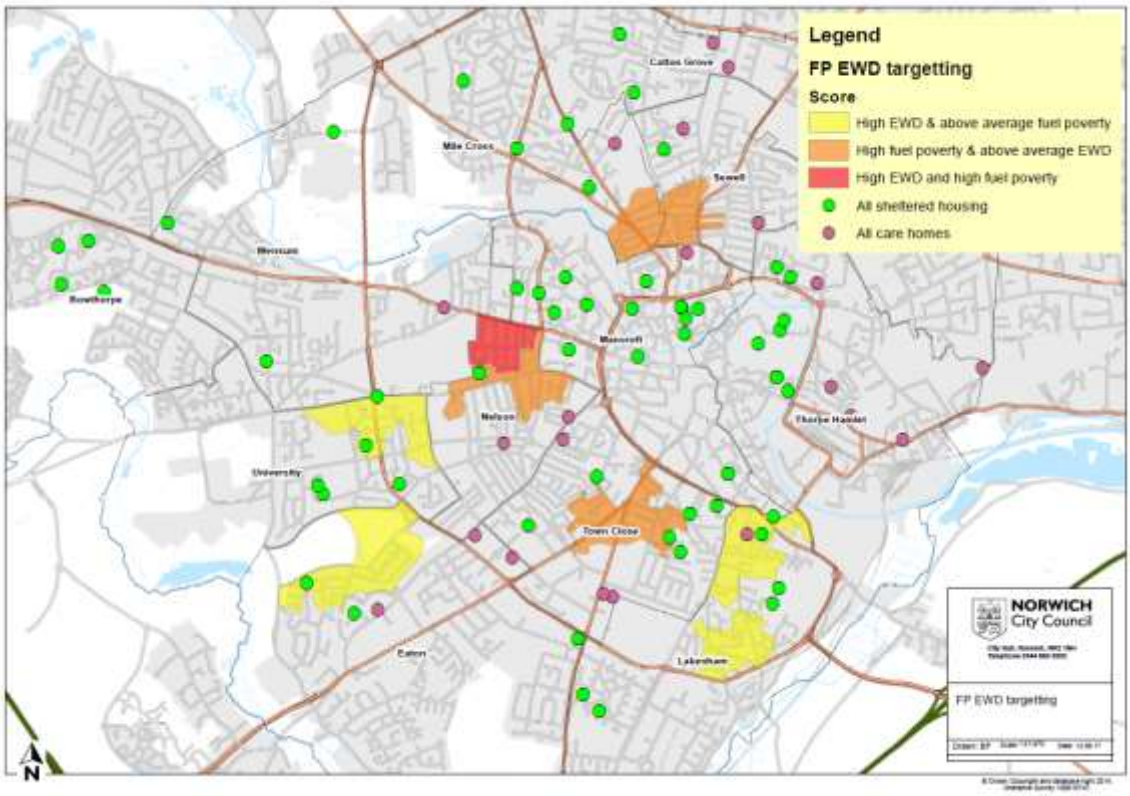
Map 2 – Excess cold:



5.11 We are able to use this data to target cold homes for home energy efficiency improvements and help with heating costs.

5.12 The council has also mapped fuel poverty and excess winter death data for Norwich (Map 3, below), allowing us to identify areas with the highest risk of negative health outcomes due to cold. This has been used to target these areas with appropriate fuel poverty focused advice, including information about our switching service, making sure residents are not trapped on expensive standard tariffs.

Map 3 – Fuel Poverty and Excess Winter Deaths in Norwich



5.13 The table below shows the energy efficiency rating of the private sector stock across the city. A is the most energy efficient category, with G being the least energy efficient. 13.7% of private sector properties are F&G rated. To set some context, in England 4% of properties are rated as EPC F&G[1] (across all tenures).

Energy Efficiency Rating (Based on SAP) private sector stock

	Count	Percent
(92-100) A	0	0%
(81-91) B	122	<1%
(69-80) C	4,281	10%
(55-68) D	13,726	32%
(39-54) E	18,846	44%
(21-38) F	5,424	13%
(1-20) G	478	1%

Source: BRE Stock modelling data (2014)

Council stock:

[1] DCLG: Energy Efficiency of buildings certificates in England and Wales: 2008 to December 2016 (2019)

5.14 The council stock consists of approximately 15,000 dwellings.

5.15 In December 2010 the council's housing stock achieved the decent homes standard and the council has continued to build on this good work developing the 'Norwich Standard'. The Norwich Standard is a commitment to ensure that no individual component goes beyond its life expectancy, for example, no kitchen will be older than 20 years, no bathroom older than 30 years and no boiler older than 15 years. Currently 98% of our properties meet this standard.

5.16 The average SAP rating across council housing stock is 70.94. This equates to an Energy Performance Certificate (EPC) rating of C.

5.17 To set some context, in 2019 the average SAP rating across 22.5 million English dwellings, regardless of tenure, was 65 points, or an EPC rating of D[2]. This was an improvement on the 1996 figure of 45 points, or an E rating. Social housing continues to be more energy efficient than the private sector.

5.18 Whilst Norwich's private sector housing SAP rating (63) is lower than the national average SAP rating (65), the SAP rating for council stock (70.94) is significantly higher.

Warm Homes Data

5.19 In 2019, The Warm Homes Team at Broadland District Council commissioned the Energy Saving Trust to produce a stock model for housing in Norfolk.

5.20 Using EPC data, and models to predict likely property types for those without EPC's, this has produced a stock survey of all housing in Norwich. This includes the likelihood of fuel poverty and we have used it to target interventions and information campaigns to the most at risk areas of the city and inform bids and energy efficiency works.

[2] Source: Ministry of Housing, Community and Local Government. *English Housing Survey, Headline Report 2019-2020* (December 2020)

Section 6 - CO_2 emissions from across the city

The national picture[3]:

6.1 UK primary energy consumption increased from 1970 to a peak in 2001. Since then levels have decreased by 11%. This is thought to be due to a number of factors, including (at a national level) the decrease in 'dirty energy' from coal and petroleum going into the national electricity grid and the increase in 'clean energy' such as renewable technologies. Energy efficiency improvements have also contributed to this decrease.

6.2 In 2019 domestic energy consumption made up 29% of the total UK energy requirement – a slight increase from previous years. Since 1970 the number of UK households has increased by 49% from 18.8 million to 28.0 million households, however domestic energy consumption has only increased by 8.8% over the same period.

6.3 Heating is the main energy requirement of most UK homes. Gas is the dominant fuel used in the domestic sector. In 2016, 80 percent of energy use in homes was required for space and water heating. However, this means that domestic gas consumption figures are profoundly influenced by the outside temperature.

The local picture:

6.4 Table 1 and Graph 1 both show that between 2005 and 2018 the population of Norwich increased each year, in total by an additional 15,500 residents over the 13 year period.

6.5 The per capita emissions dropped consistently and then levelled out in 2010, followed by a significant drop in 2011, a rise in 2012, then a continued decrease. Since 2005 industrial emissions have decreased by 56.8%, domestic emissions 42.8% and transport 18.5%.

6.6. These trends reflect the volatile nature of the energy required for space heating. The domestic and industrial sectors require energy for heating living and business spaces and both were obviously influenced by the significant cold snap in 2010, shown by the noticeable peak in carbon dioxide emissions in this year.

6.7 The peaks observed in 2010 and 2012 are due to an especially cold and extended winter in 2010 (average of 8 degree Celsius per day) and a warmer than expected 2011 (average 9.6 degree Celsius per day), followed by a typical 2012 (average of 8.8 degree Celsius per day).

[3] DBEIS: Energy consumption in the UK (2018).

6.8 2013 was also very close to the average (8.8 degree Celsius per day), followed by 2014, which was the hottest UK year on record at the time (average 9.9 degree Celsius per day), reflected in the sharp drop in carbon emissions that year, at least in part due to less energy being required for heating purposes both in the Industrial and Domestic sectors.

6.9 2015 (average 9.2 Celsius per day) and 2016 (average 9.3 Celsius per day) both saw a mild winter, which may help explain why emissions continued to fall. 2018 was also warmer than average for the UK, although there was prolonged cold weather in late February and March – the most significant spell of snow and low temperatures for the UK since 2010. Nevertheless the mean temperature was still 0.6^{O}C warmer than the long-term average and East Anglia had its sunniest year on record[4].

6.10 This may help explain why emissions continue to fall, along with general improvements in household energy efficiency. Although we must be aware that, due to long-term climate change, there may be increased demand for household cooling, which could negatively impact carbon reductions.

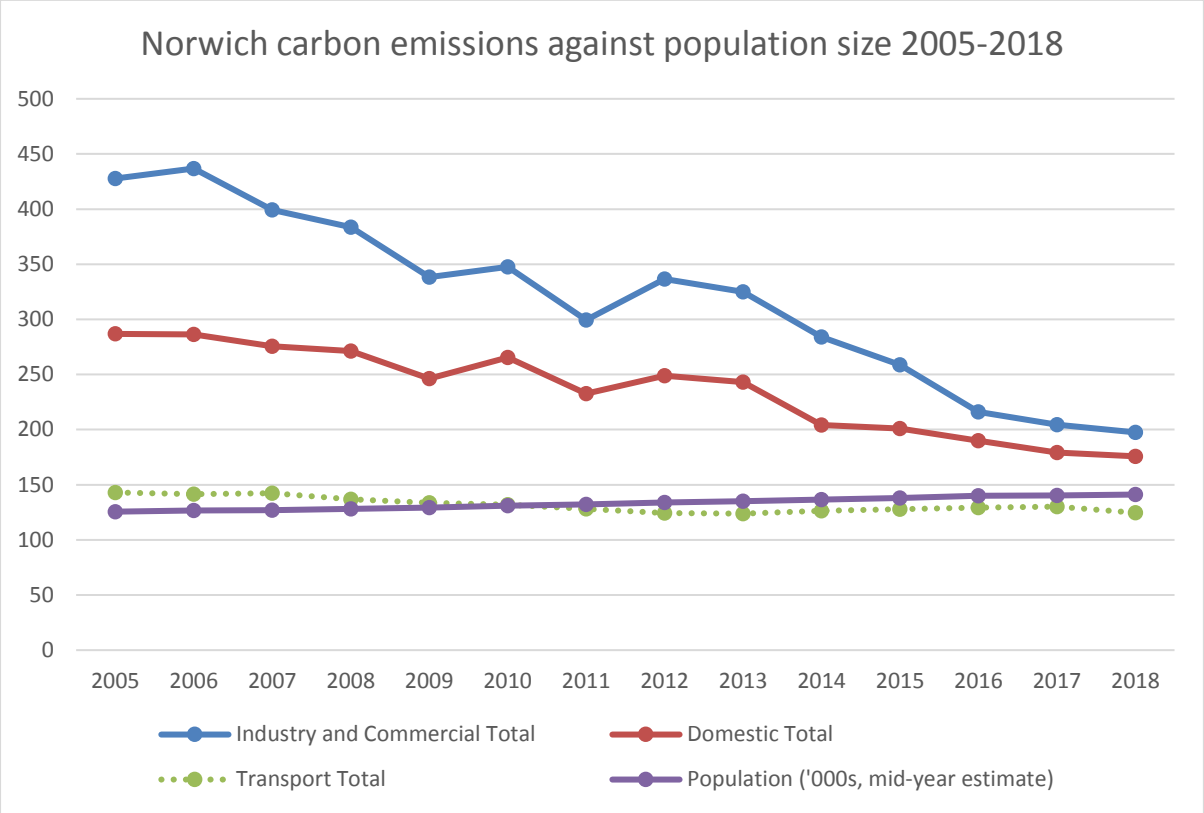
Table 1: Norwich carbon dioxide emissions 2005-2018

Norwich CO_2 emissions estimates 2005-2018 (kt CO_2)							
Local Authority	**Year**	**Industry and Commercial Total**	**Domestic Total**	**Transport Total**	**Grand Total**	Population ('000s, mid-year estimate)	Per Capita Emissions (t)
Norwich	2005	**427.8**	**286.8**	**143**	**857.2**	125.6	6.8
	2006	**436.8**	**286.2**	**141.4**	**864**	126.8	6.8
	2007	**399.3**	**275.5**	**142.3**	**816.5**	126.9	6.4
	2008	**383.6**	**271.2**	**136.8**	**791**	128	6.2
	2009	**338.4**	**246.2**	**133.5**	**717.5**	129.2	5.6
	2010	**347.7**	**265.3**	**131.9**	**744.2**	130.9	5.7
	2011	**299.4**	**232.7**	**128.1**	**659.4**	132.2	5
	2012	**336.5**	**248.8**	**124.2**	**708.7**	133.9	5.3
	2013	**325**	**243**	**123.8**	**690.9**	135.1	5.1
	2014	**284.1**	**204.3**	**126.5**	**613.9**	136.6	4.5
	2015	**258.9**	**201.1**	**127.7**	**586.7**	138.1	4.2
	2016	**216**	**190**	**129.4**	**534.4**	139.9	3.8
	2017	**204.4**	**179.1**	**130.1**	**512.5**	140.4	3.7
	2018	**197.5**	**175.8**	**124.6**	**496.8**	141.1	3.5

Source: DECC: UK local authority and regional carbon dioxide emissions national statistics: 2005-2018 (June 2020)

[4] Met Office: UK Weather Summaries (2020)

Graph 1: Norwich carbon emissions against population size



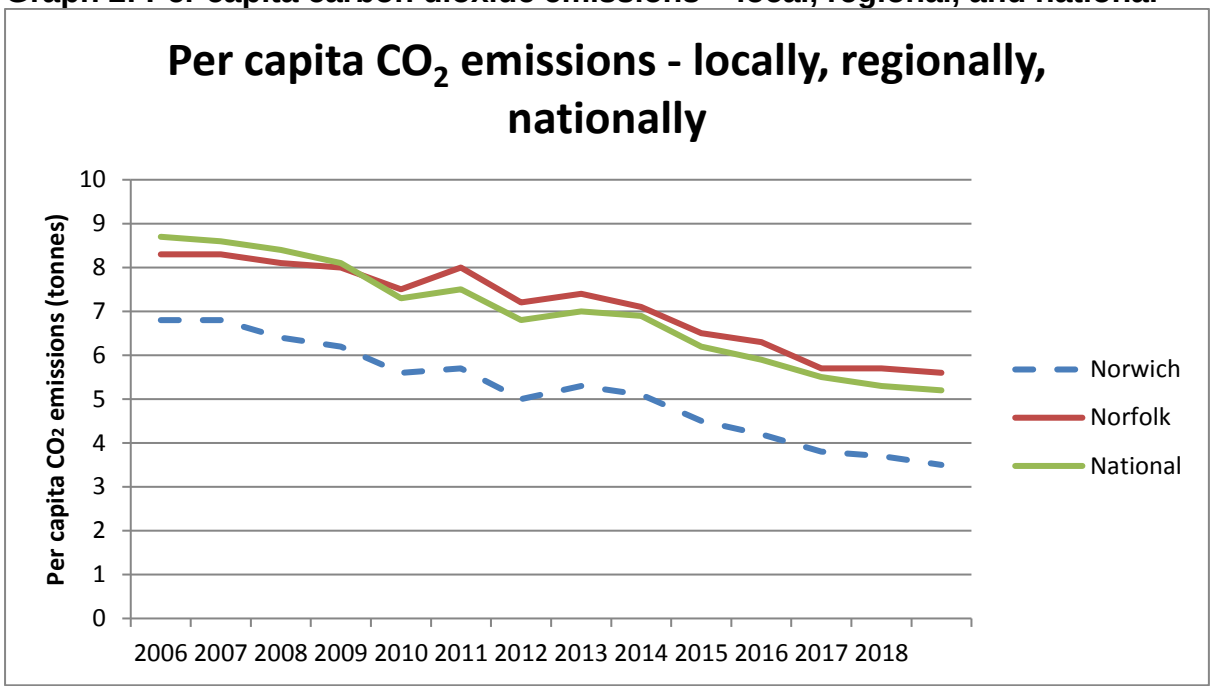
Source: DECC: UK local authority and regional carbon dioxide emissions national statistics: 2005-2018 (June 2020)

6.11 Between 2005 and 2018 Norwich reduced its carbon dioxide emissions by 48.5% (taken across all 3 sectors), whilst experiencing an increase in its population of 12.3%.

6.12 Graph 2 (below) shows Norwich's per capita carbon dioxide emissions between 2005 and 2018 were considerably lower than those at both a county and a national level. Local, regional and national levels largely follow the same peaks and troughs associated with a cold period in 2010, a warm 2011 and an even warmer 2014. The overall trend is a significant reduction with Norwich dropping from 6.9 tonnes per capita of CO_2 in 2005 to 3.5 tonnes per capita 13 years later.

6.13 The figures for tonnes of CO_2 produced by sector vary too widely at a local, regional and national level to be able to present them graphically in a meaningful way. Only the per capita emissions are directly comparable. This is shown in Graph 2, below.

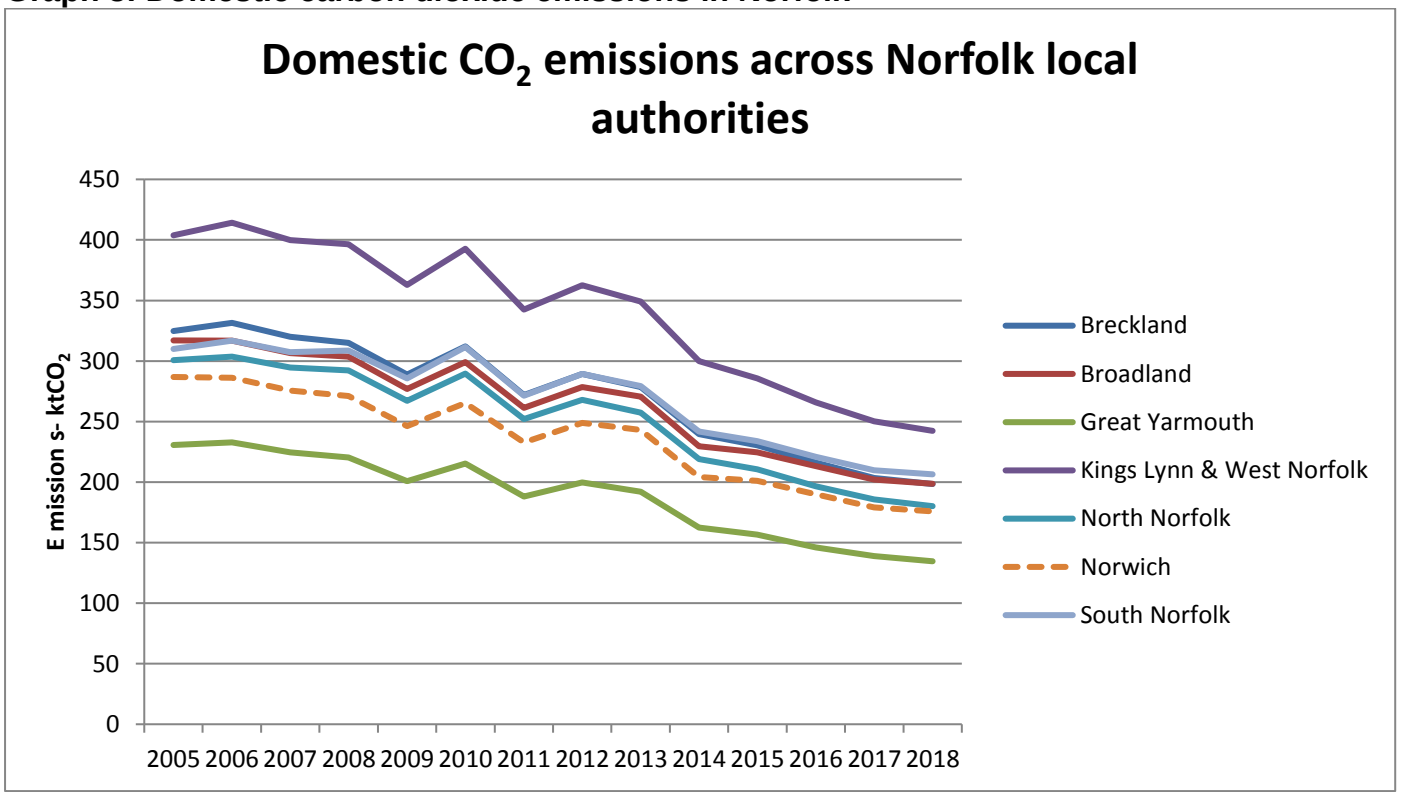
Graph 2: Per capita carbon dioxide emissions – local, regional, and national



Source: DECC: UK local authority and regional carbon dioxide emissions national statistics: 2005-2018 (June 2020)

6.14 It is possible to compare Norwich with its nearest neighbouring local authorities, as in shown in Graph 3, below. Again, a broadly similar pattern of peaks and troughs are seen for all Norfolk local authorities.

Graph 3: Domestic carbon dioxide emissions in Norfolk



Source: DECC: UK local authority and regional carbon dioxide emissions national statistics: 2020-2018 (June 2020)

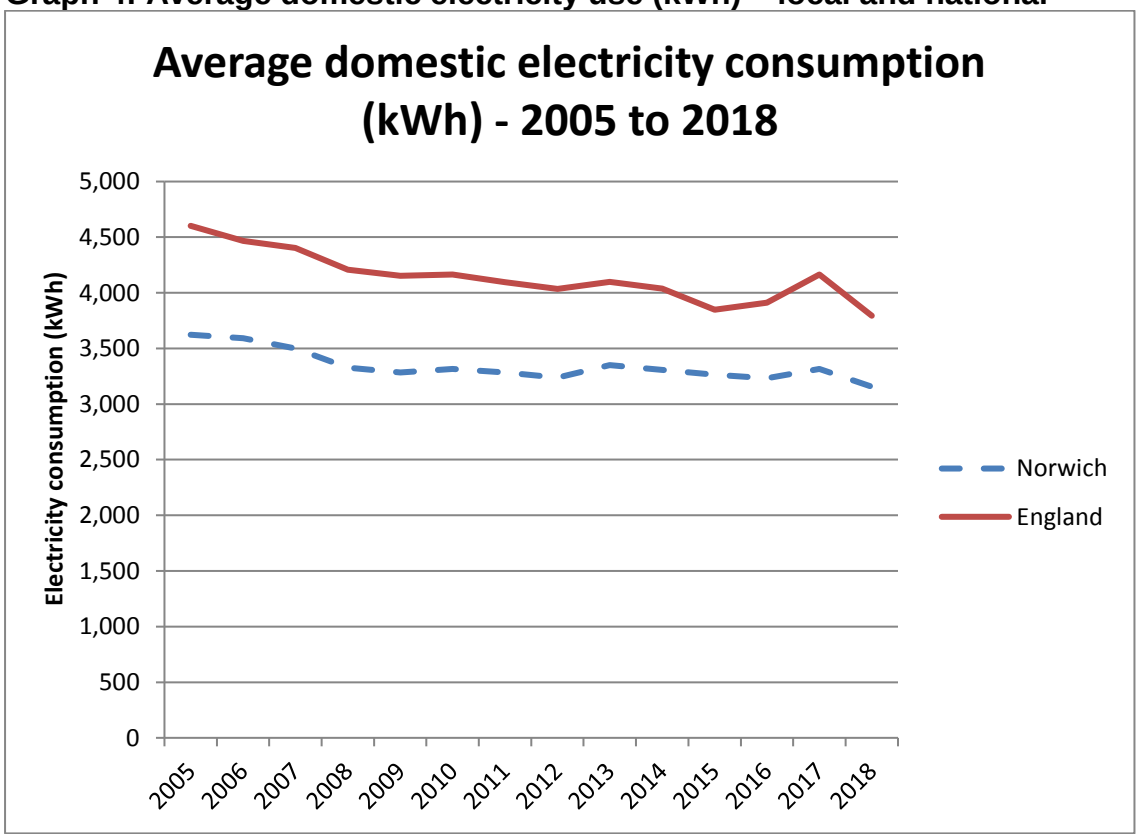
6.15 Carbon dioxide emissions have fallen across the county over the period 2005-2018, with a rise in 2010 due to extended periods of cold weather and snow. The Norwich local authority area created the lowest level of carbon dioxide emissions, behind Great Yarmouth. This is thought in part to be due to the city being well connected to the national gas grid for mains heating when compared to more rural areas that rely on more carbon dirty forms of energy such as coal or oil.

Domestic energy use:

6.16 The following graphs (4-7) show the trends in electricity and gas use in Norwich as compared to the national average. Both the national average and Norwich figures show an overall decrease in gas and electricity consumption over the 13 year period to 2018, with Norwich average domestic electricity consumption being significantly lower than the national average.

Domestic electricity use in Norwich:

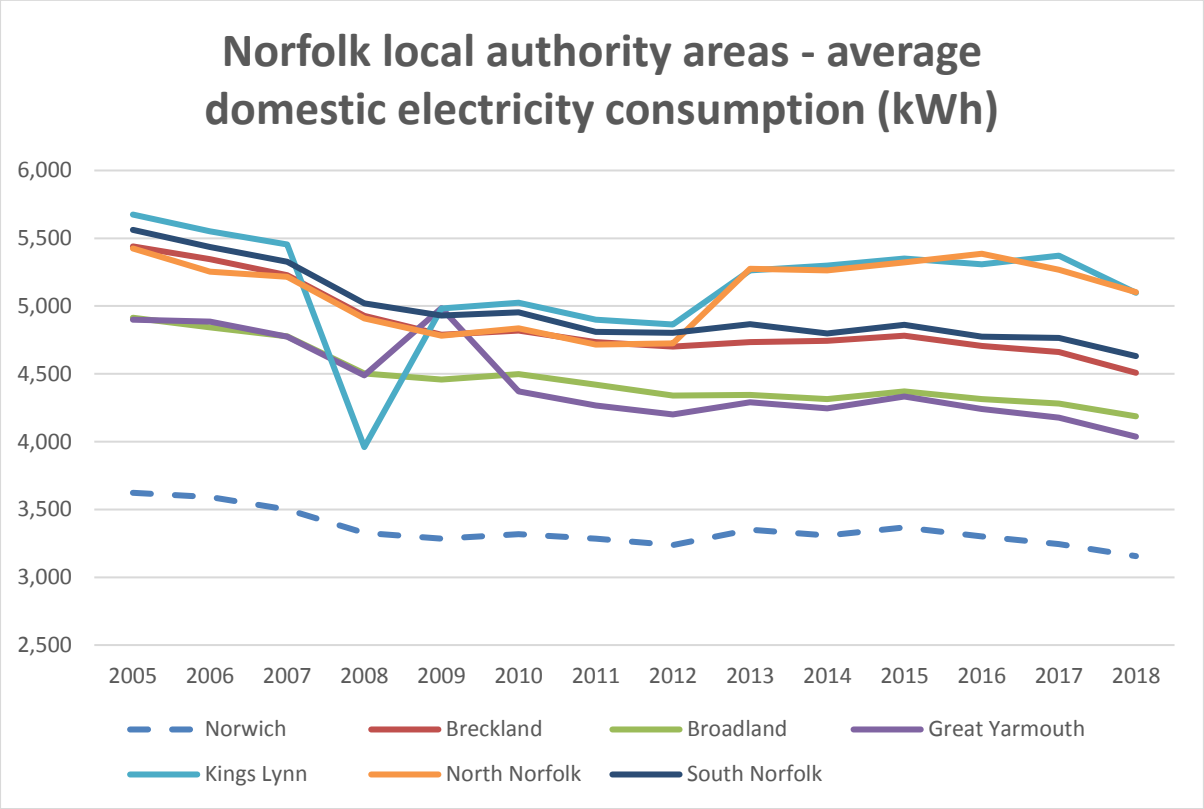
Graph 4: Average domestic electricity use (kWh) – local and national



Source: DBEIS: Regional and local authority electricity consumption statistics: 2005 to 2018 (2020)

6.17 At a regional level, compared with neighbouring Norfolk local authorities average electricity use is by far the lowest in the county. This is likely due to the larger number of off-gas homes in other local authority areas, who rely on electric heating and solid fuels for heating.

Graph 5: Norfolk – average domestic electricity use (kWh) across Norfolk

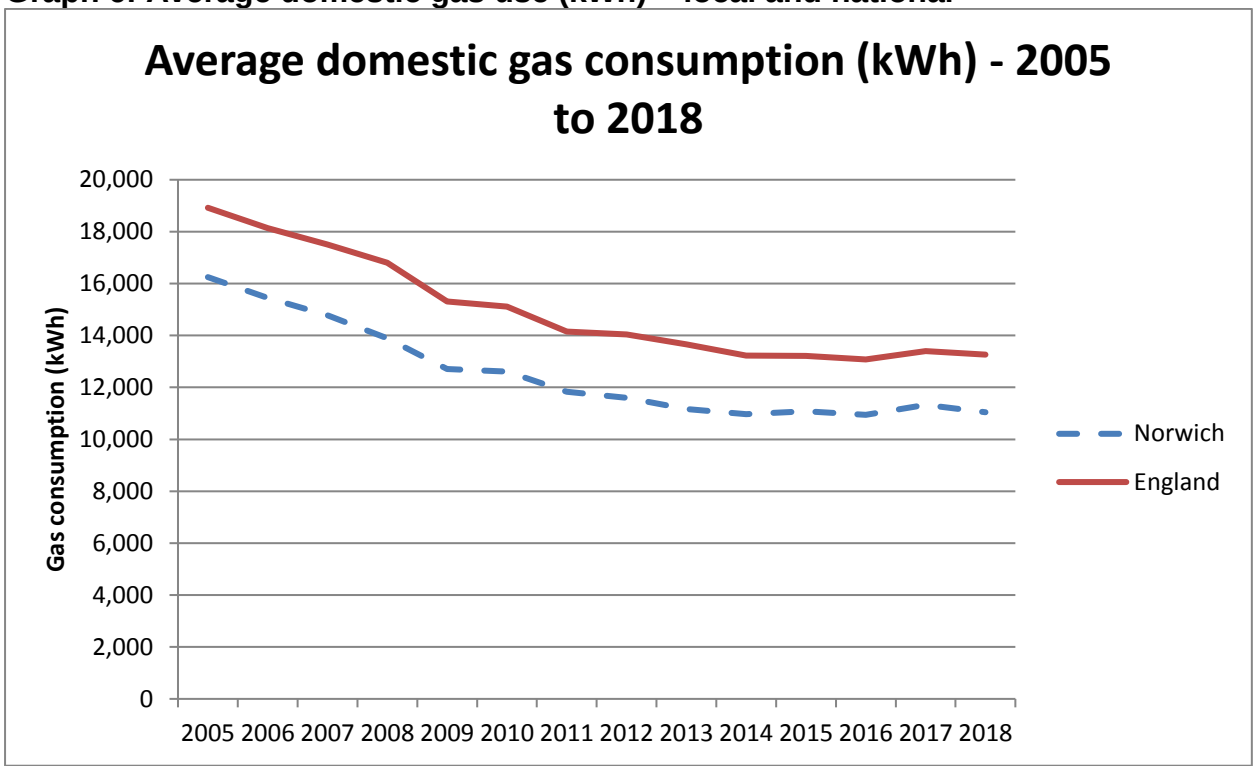


Source: DBEIS: Regional and local authority electricity consumption statistics: 2005 to 2018 (2020)

Domestic gas use in Norwich:

6.18 Graph 6 shows gas consumption in Norwich and again shows a similar trend to domestic electricity use in the city, that of significant reduction over the 10 year period. Of particular interest is the large difference between domestic gas consumption in Norwich and the national level gas consumption. This could be due to a range of factors including; household income levels, energy efficiency of housing and how many hours a day homes are occupied for.

Graph 6: Average domestic gas use (kWh) – local and national



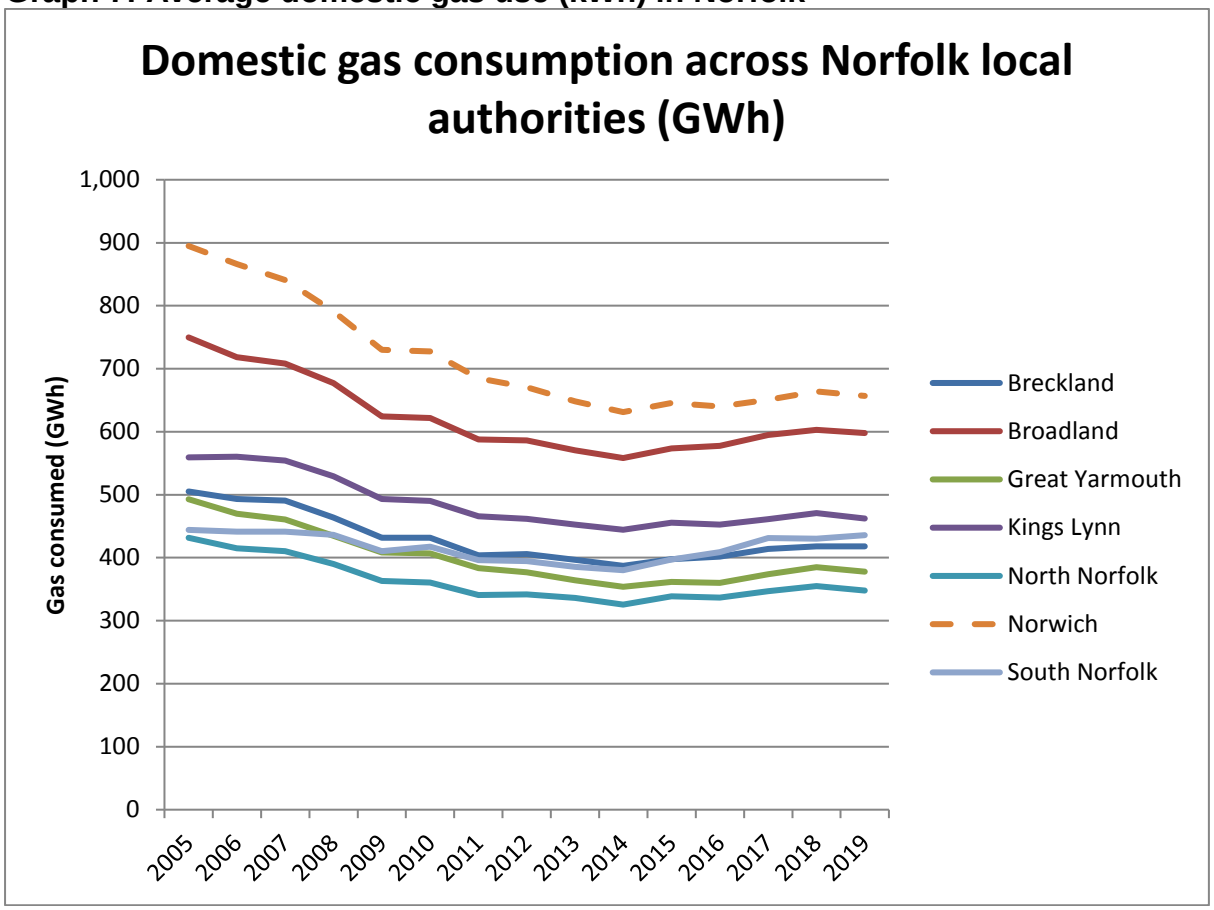
Source: DBEIS: Regional and local authority gas consumption statistics: 2005 to 2018 (2020)

6.19 Graph 7 shows how Norwich compares at a regional level. Norwich is by far the largest consumer of domestic gas in Norfolk. However, this is most likely to be because there are large parts of Norfolk which remain 'off-gas' and are reliant on other forms of domestic energy such as oil fired central heating. This is likely to play a part in the higher electricity consumption seen across the rest of the county as some households who are 'off-gas' will use electric heating as an alternative.

6.20 All local authorities saw a slight increase in gas usage in 2018 followed by a decrease in 2019. This may be due to the prolonged cold snap in 2018 discussed earlier, whereas in 2019 it was the second warmest February since 1910, and December was also a degree warmer than the average[5]. This may explain why gas usage was smaller that year, as the winter required less heating than normal.

[5] Met Office Weather Report Annual Summary 2019

Graph 7: Average domestic gas use (kWh) in Norfolk



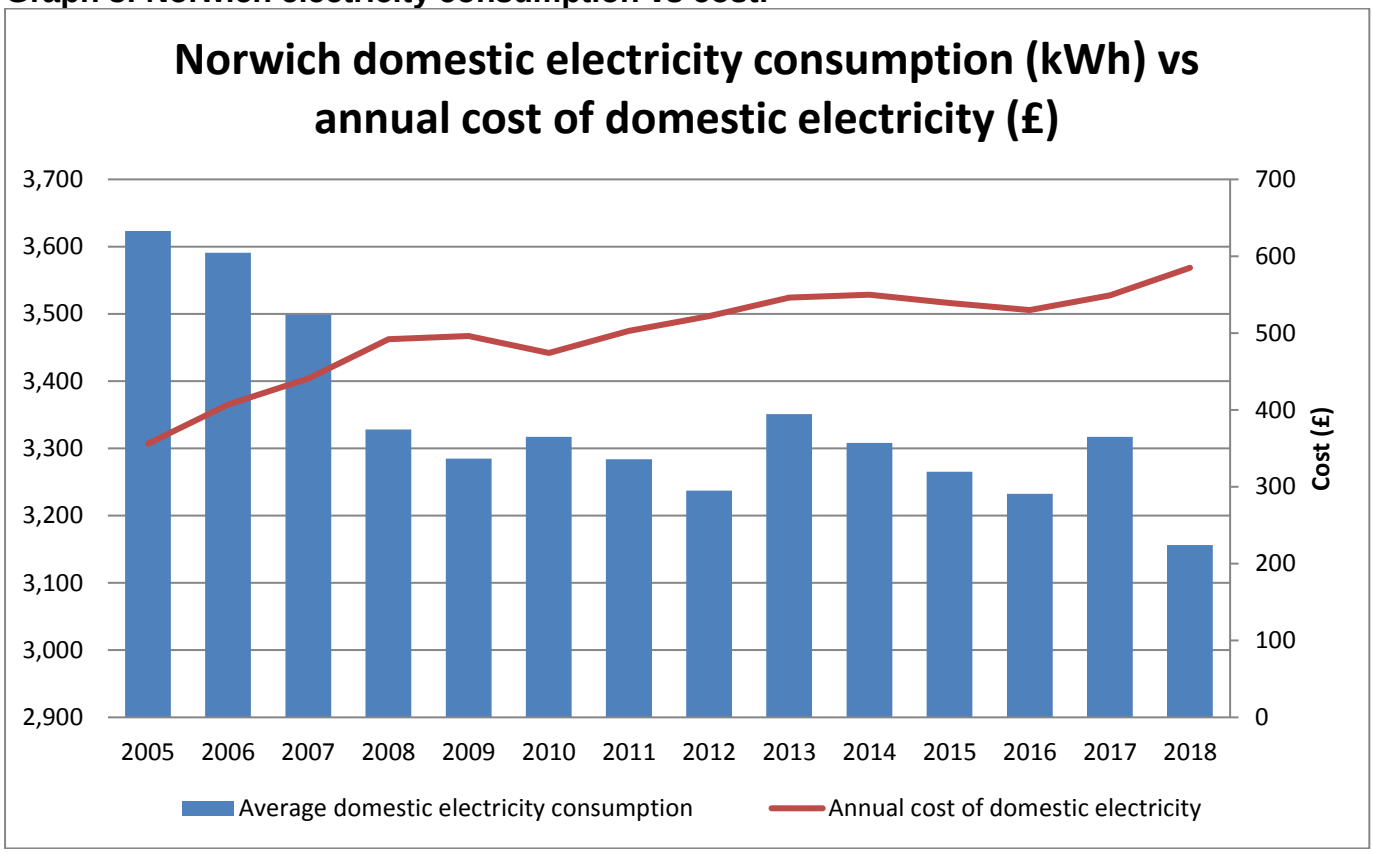
Source: DBEIS: Regional and local authority gas consumption statistics: 2005 to 2019 (2020)

6.21 While energy efficiency measures do have a positive impact on reducing gas consumption, the increase in fuel prices over this period is also likely to be a factor, causing more households to reduce the amount of time they heat their homes for, even if this has a negative impact on their health and wellbeing.

6.22 Gas consumption falls more sharply at a local level than electricity consumption and this may reflect the fact that, in the city at least, a majority of homes will be heated using gas central heating. The decision to 'heat or eat' is sadly a reality that many households facing fuel poverty may have to make.

The rising cost of energy:

Graph 8: Norwich electricity consumption vs cost:



Source: DBEIS: Regional and local authority electricity consumption statistics: 2005 to 2018 (2020)/ DBEIS: Annual domestic energy bills (2018)

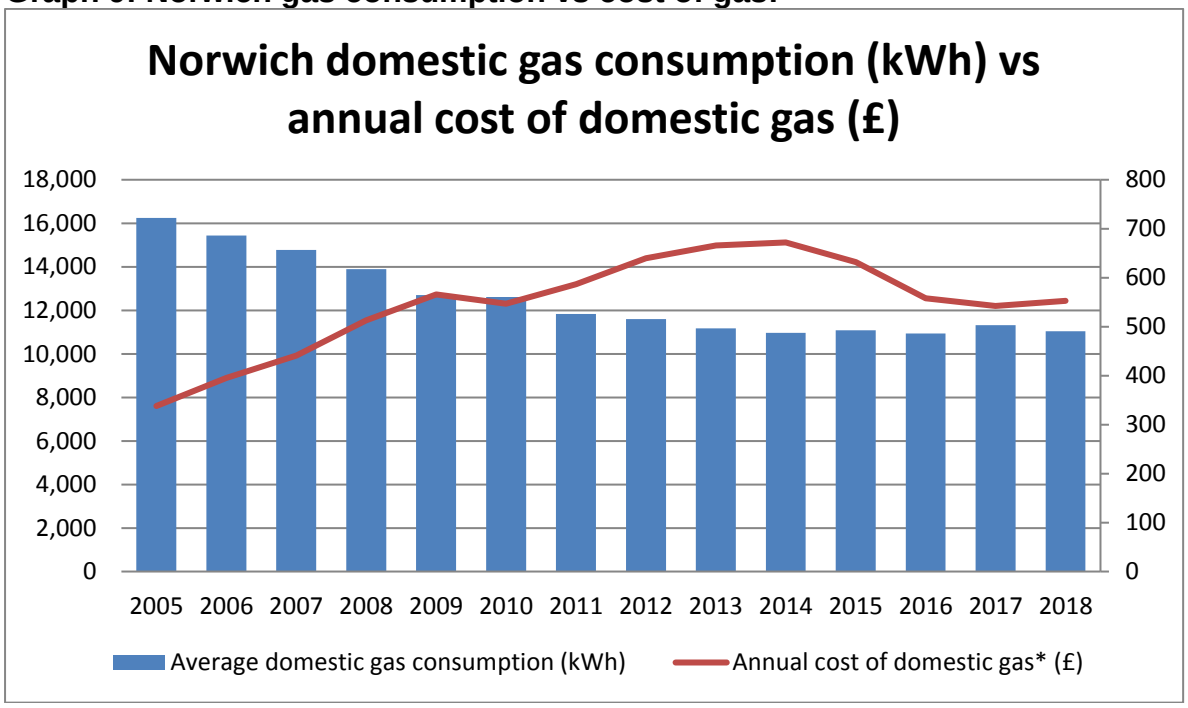
6.23 Graph 8, perhaps unsurprisingly, appears to show a close relationship between the cost of electricity and electricity consumption. Note in 2010 where the cost of electricity dips for the first time since 2006 electricity consumption increases. And again in 2012 when electricity prices increase once more consumption drops once again.

6.24 You can see that the cost of domestic electricity continues to rise, which will impact on consumption. Indeed in 2018 consumption dipped to its lowest since 2005, although increased energy efficiency and insulation will also have played its part.

6.25 It is unclear why 2017 showed a spike in consumption, despite prices increasing, however there were some significant weather events in 2017, including Storm Doris, Storm Aileen, Ex-Hurricane Ophelia and Storm Caroline, which may have led to increased demand[6].

[6] Review of the year - 2017 UK Weather. Met Office, 2018.

Graph 9: Norwich gas consumption vs cost of gas:



Source: DBEIS: Regional and local authority gas consumption statistics: 2005 to 2018 (2020)/ DBEIS: Annual domestic energy bills (2018)

6.26 Graph 9 shows the relationship between domestic gas consumption in Norwich and the price of gas. The overall trend is for a reduction in gas use, although this drop slowed in 2009/2010 with the drop in gas prices, and continued until gas prices reached their peak in 2014, when consumption rose slightly with the drop in gas prices. Despite the annual cost of domestic gas dropping dramatically since 2014 consumption has stayed fairly flat, with a small increase in 2017 and then a further reduction in 2018. This may suggest that energy efficiency improvements have meant people need to consume less regardless of price.

6.27 Although it would seem there is a relationship between the two factors, to suggest that the cost of energy is the only contributing factor to energy consumption would be to over-simplify the complexity of this situation.

6.28 The increases in the levels of home insulation e.g. loft and cavity and solid wall insulation, will also serve to reduce the amount of energy required to heat domestic properties. In addition, the number of properties producing their own renewable energy e.g. from photovoltaic panels will also result in a reduction in the amount of energy consumed from the national grid. Both the installation of home insulation and domestic renewables require the ability to be able to afford the investment in these technologies, which can be considerable. The rate of take up of both home insulation and renewables will be considered later in this report.

Section 7 - Fuel poverty:

7.1 Fuel poverty is a devolved issue and is measured differently in different parts of the UK. In England fuel poverty is measured by the Low Income High Costs (LIHC) indicator.

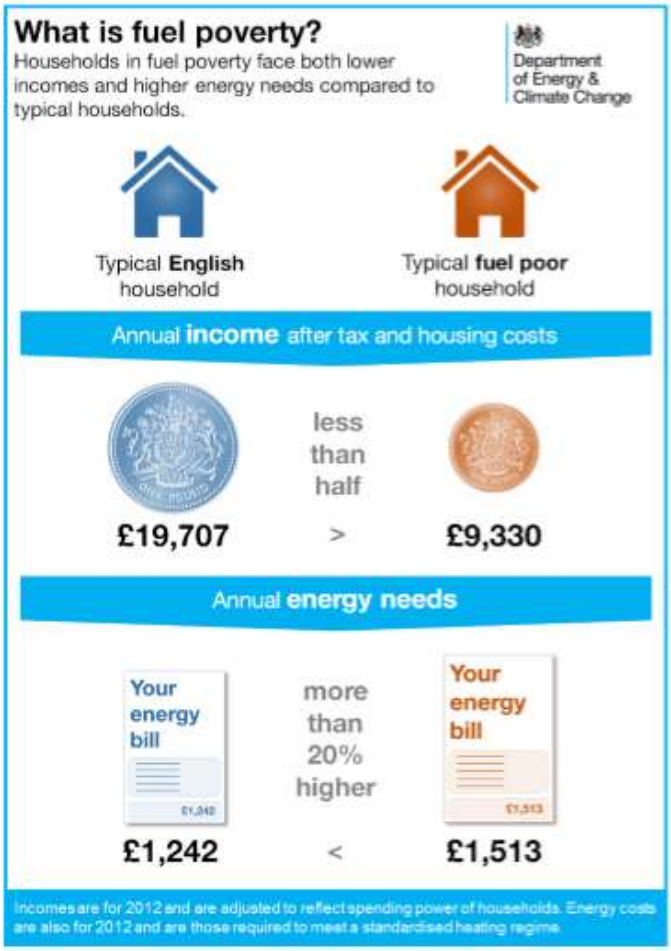
7.2 Under the LIHC indicator a household is considered to be in fuel poverty if they have required fuel costs which are above the national average (national median level) and were they to spend that amount, they would be left with a residual income below the official poverty line.

7.3 The current definition of the poverty line, or relative poverty, is defined as 60 percent of the median UK household income. If a household's income is less than 60 percent of this average, they are considered to be living in relative poverty. Professor Peter Townsend, a leading authority on UK poverty, defines relative poverty as when someone's "resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities".[7]

7.4 To put it more broadly, a fuel poor household is one which cannot afford to keep warm at a reasonable cost.

7.5 The government infographic below attempts to explain what fuel poverty is in real terms under the LIHC indicator.

[7] JRF: Reporting Poverty in the UK: a practical guide for journalists 2009



Source: DECC: Cutting the cost of keeping warm – a fuel poverty strategy for England (2015)

7.6 In July 2019 central government went out for consultation on a new proposed indicator, Low Income Low Energy Efficiency (LILEE), however this response has not yet been published. At the time the council reported concern that low income families in relatively efficient Band C homes would be disadvantaged by this change as it would become more difficult for them to access support schemes.

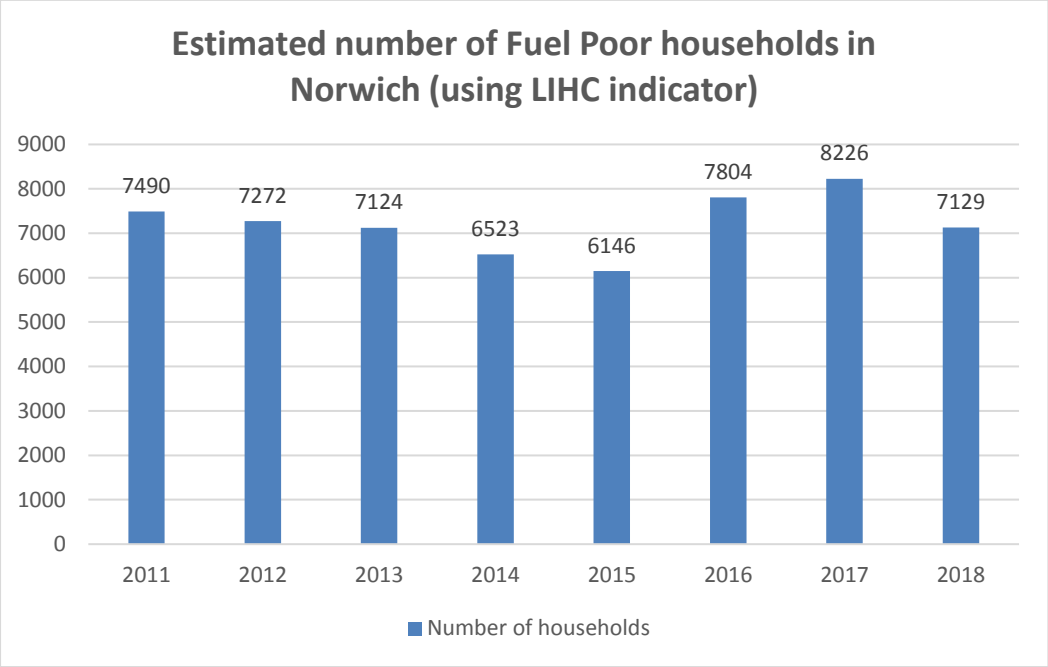
7.7 Under the new measures, a household would be classed as fuel poor if:

- They are living in a property with an energy efficiency rating of Band D, E, F or G; and
- Their disposable income (after housing costs and energy needs) would be below the poverty line

7.8 It is expected that under the new measure the number of homes in fuel poverty will increase nationally from 2.55 million to 3.66 million (11.1% to 15.9%). We wait to see what impact this will have on reporting in Norwich.

7.9 Graph 10 (below) shows the current numbers of fuel poor households in Norwich.

Graph 10: Estimated number of Fuel Poor households in Norwich



Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)

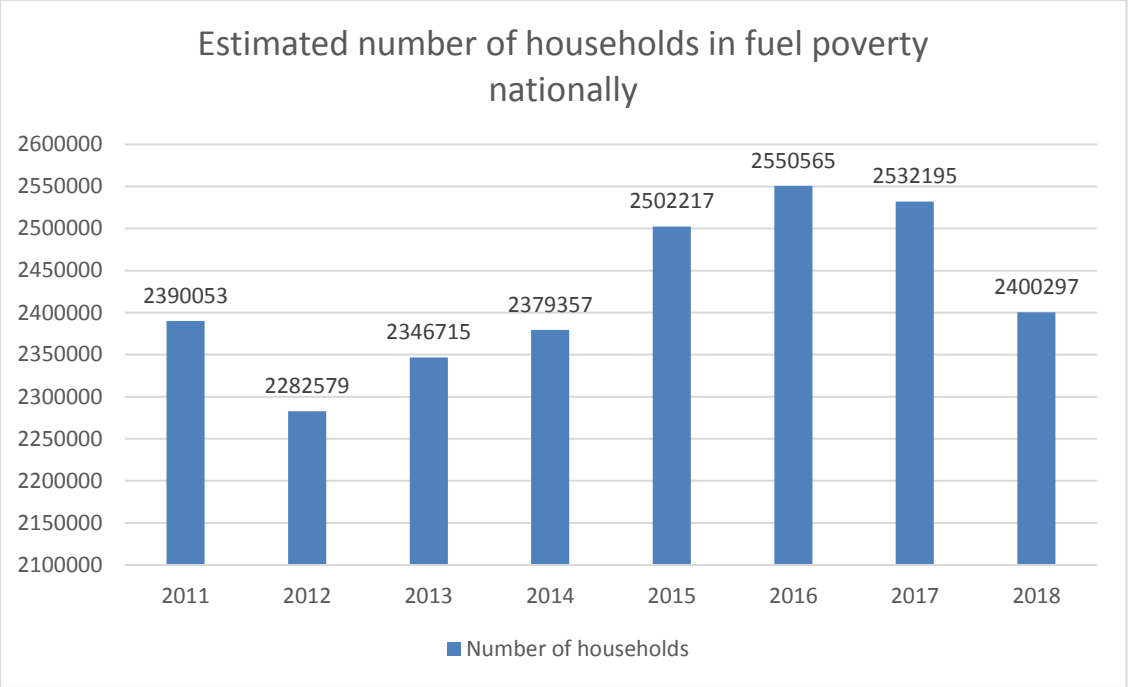
7.10 ***What does it show?*** In Norwich fuel poverty has decreased since the HECA was previously published, with levels now at 7,129. This mirrors a national decrease. Norwich has now returned to 2011 levels, when the current indicator was introduced.

7.11 Sadly fuel poverty rose in 2017. In 2017 the price cap on standard variable tariffs had not been introduced, and the price cap on prepayment meters had only been in force for one quarter. Therefore there was a continued lack of protection for vulnerable households.

7.12 Compared to other councils Norwich has a lower median income (£21,452 compared to £23,952 for Broadland and £24,704 for South Norfolk) and a higher amount of JSA and UC claimants (more than double the amount of claimants when compared to Broadland and South Norfolk).

7.13 All of this occurred while 2017 saw the CPIH (Consumer Prices Index including owner occupiers housing costs) hit the highest rate since March 2012. Utility prices became the second-largest contributor to CPIH, showing a much larger contribution than in 2016.

Graph 11: Estimated number of fuel poor households - nationally



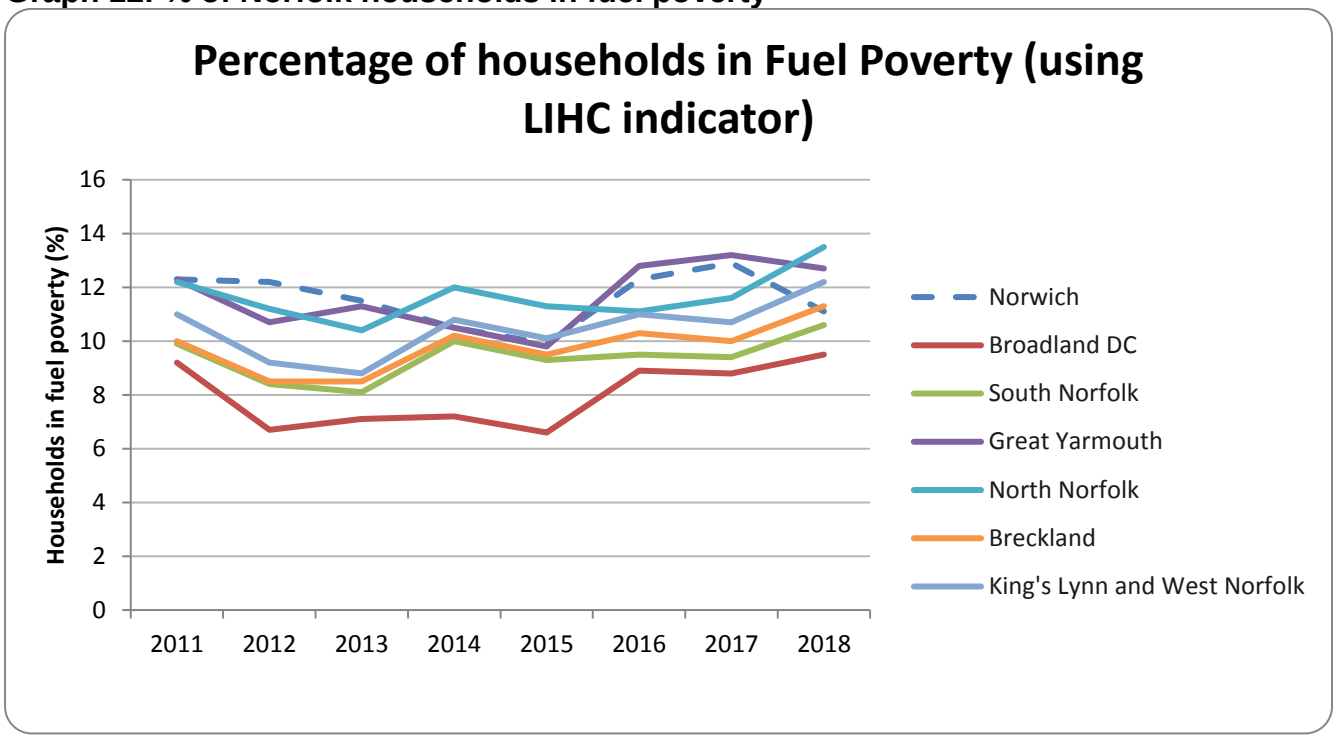
Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)

7.14 ***What does it show?*** At a national level, following the introduction of the LIHC indicator in 2012, the number of fuel poor households dropped, but increased 2013 – 2016. However in 2018 fuel poverty decreased to just over 2.4 million households.

7.15 This was broadly due to two reasons – fuel bills for low-income households increasing more slowly than average and incomes increasing at a higher rate than average for these groups[8].

[8] BEIS, Annual Fuel Poverty Statistics Report 2020 (2018 Data). June 2020

Graph 12: % of Norfolk households in fuel poverty



Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)

7.16 ***What does it show?*** In 2011 Norwich experienced one of the highest levels of fuel poverty in the county. Although levels of fuel poverty dropped from 2012-15 Norwich City Council, like many other local authorities, saw an increase in 2016. The regional increase in 2016 mirrors the national trend. However we since seen a reduction in fuel poverty and are one of very few local authorities in Norfolk to see a reduction in 2018.

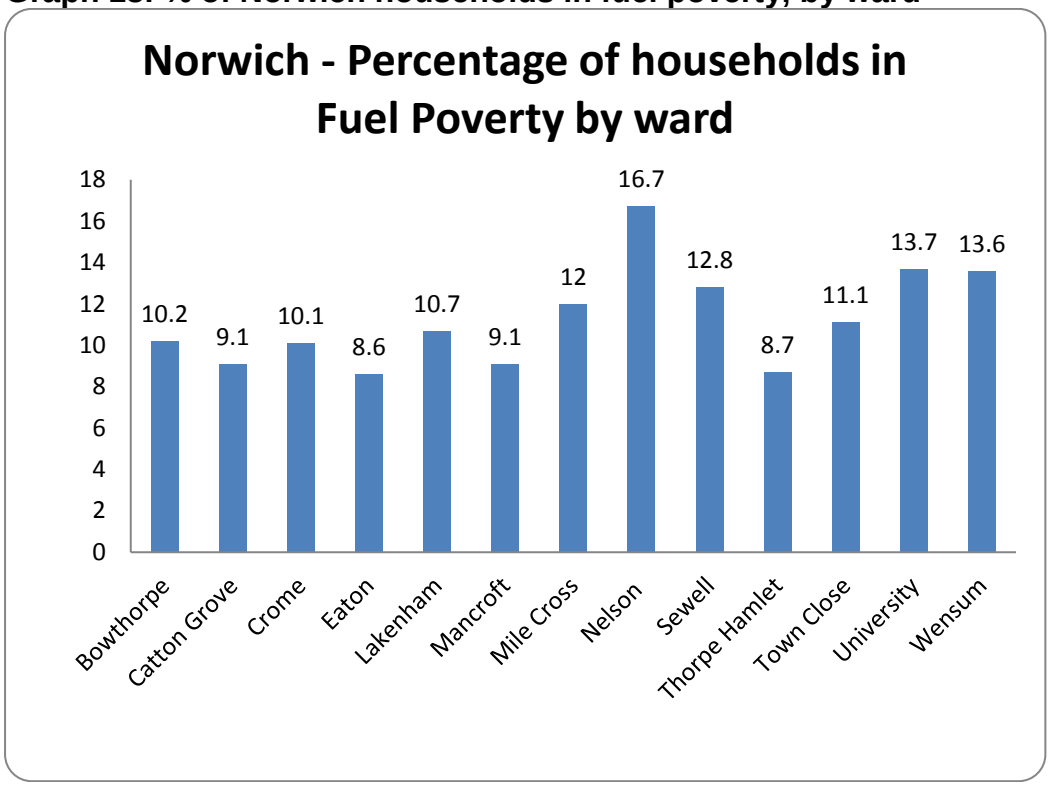
7.17 Norwich City Council have invested considerable resources into supporting those households in fuel poverty through a range of initiatives including: the Cosy City scheme supporting residents to utilise Energy Company Obligation (ECO) funding for home insulation, the Big Switch and Save collective energy switching scheme, our Warm and Well work both with stakeholders and the public, Home Improvement team work, work with the Private Sector landlords around category 1 hazards and ongoing improvements to our housing stock. Fuel poverty is complex and we are not complacent about the need to continue our work.

7.18 Our Affordable Warmth Strategy can be found here:
https://www.norwich.gov.uk/downloads/file/2241/affordable_warmth_strategy

7.19 This strategy covers the whole of Norwich and encompasses partnership working both within Norwich City Council and with external partners. It is delivered as part of our overall environmental strategy and works to reduce fuel poverty, for example through increasing home energy efficiency, will also reduce the carbon footprint of the city.

7.20 There are significant pockets of fuel poverty within the city. Graph 13 shows the fuel poverty figures for the city broken down to ward level.

Graph 13: % of Norwich households in fuel poverty, by ward



Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)

7.21 ***What does it show?*** These figures are the most recent figures released by central government and relate to fuel poverty levels in 2018. Fuel poverty levels in the city vary from ward to ward and the reasons for this are complex. Nelson is the ward with the highest percentage of households experiencing fuel poverty at 16.7%, whilst Eaton experiences the lowest levels at 8.6%. However Nelson ward has seen a reduction since our last HECA report in part due to targeted advice and support to this ward.

7.22 Measuring fuel poverty is complicated. When gauging fuel poverty levels the government uses 3 factors:

- household income,
- household energy efficiency and
- fuel prices

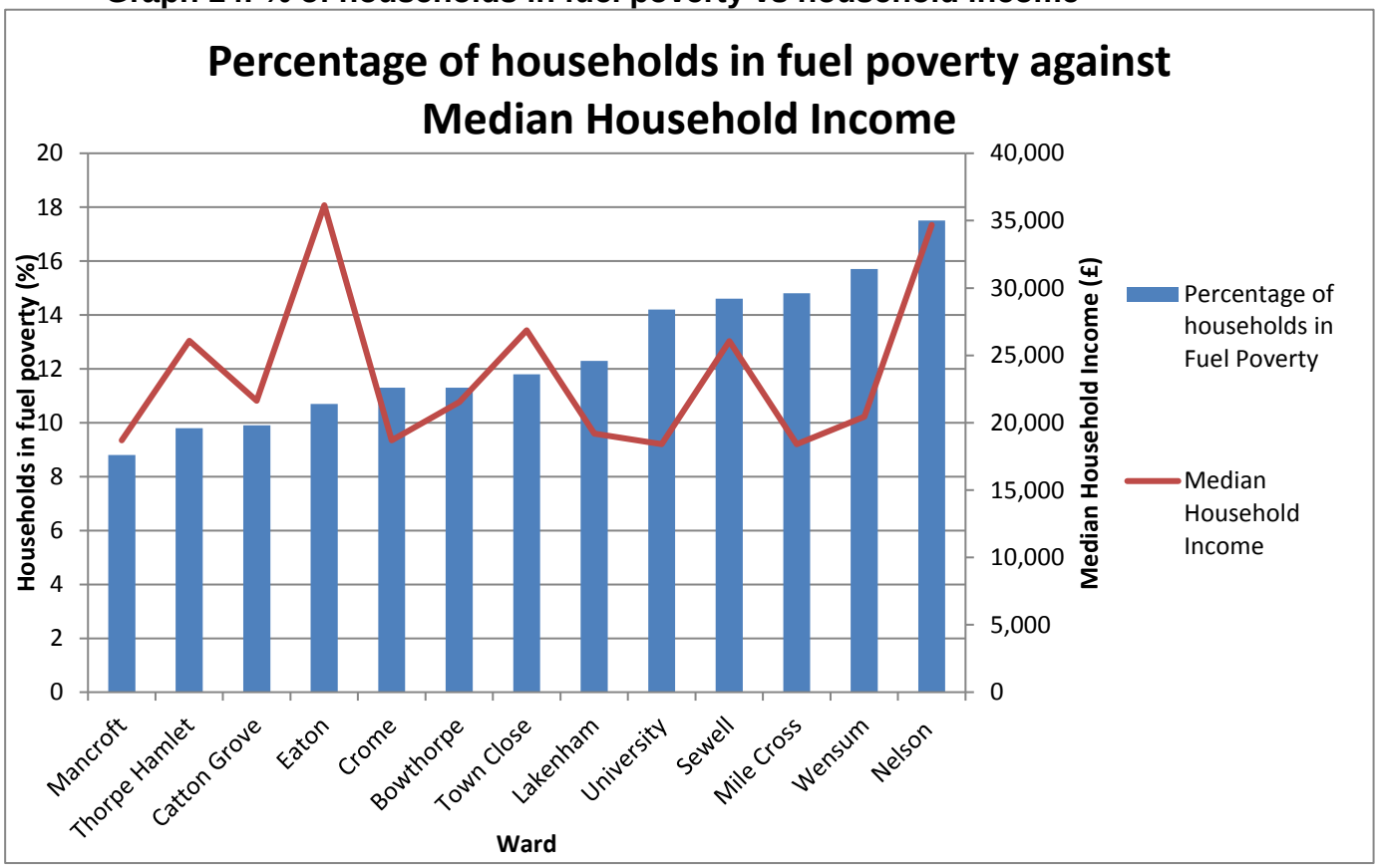
7.23 This seems quite straightforward, but other factors to consider are:

- How the dwelling is occupied – what is the 'standard heating regime' - are the residents out of the house for much of the day, or are they predominantly home-based with medical problems.
- How old is the dwelling? Is it a house or a flat, does it have a pitched or flat roof, does it have a cavity wall?
- Who owns the dwelling – the resident, a private sector landlord or the council?

7.24 In order to identify the types of households who are in the most need, the government has suggested that the following factors may be involved in identifying those most in need: a. Low income, b. Old dwelling (pre-1945), c. Larger dwelling, d. Private rented sector, e. Old/inefficient boiler (or no heating system), f. Non-gas heating[9]. In addition, within fuel poor households there are those who have increased vulnerability such as the very old or the very young and those with long-term health conditions. Everyone can be negatively impacted by living in a cold home, but these vulnerable groups are particularly at risk of the cold exacerbating underlying health conditions such as respiratory and cardiovascular problems. It has been recognised that children who are "living in cold homes are significantly more likely to suffer from chest problems, asthma and bronchitis"[10]. Cold homes can slow down recovery following discharge from hospital, when people are already at risk, and can lead to repeat admissions due to unsuitable housing. It has been estimated that housing-related ill health costs the NHS £2.5bn per year[11].

7.25 The following graphs (14-19) attempt to consider various factors that may contribute to fuel poverty levels in a ward. Firstly, median household income. This is the mid-point income figure for all the households' incomes within a ward.

Graph 14: % of households in fuel poverty vs household income



Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)/ CACI Paycheck data (2018)

[9] DECC: Fuel Poverty – a framework for future action (2013)

[10] DECC: Fuel Poverty – a framework for future action (2013)

[11] Public Health England: Local action on health inequalities – fuel poverty and cold home-related health problems (2014)

7.26 ***What does it show?*** This data shows that Nelson and Eaton have the highest median household income, despite Nelson ward having the highest amounts of fuel poverty in the city. Therefore this report must turn to the other factors in determining fuel poverty.

7.27 Another measure to consider is the Standard Assessment Procedure (SAP) rating. The SAP works by assessing how much energy a dwelling will consume, when delivering a defined level of comfort and service provision. The assessment is based on standardised assumptions for occupancy and behaviour. This enables a like-for-like comparison of dwelling performance. Related factors, such as fuel costs and emissions of carbon dioxide (CO_2), can be determined from the assessment. This gives an indicator of the energy efficiency of a property. Following assessment a SAP calculation is given from 1 to 100+ for the annual energy cost. The higher the score the lower the energy running costs, with 100 representing zero energy cost. Dwellings with a rating in excess of 100 are net exporters of energy.

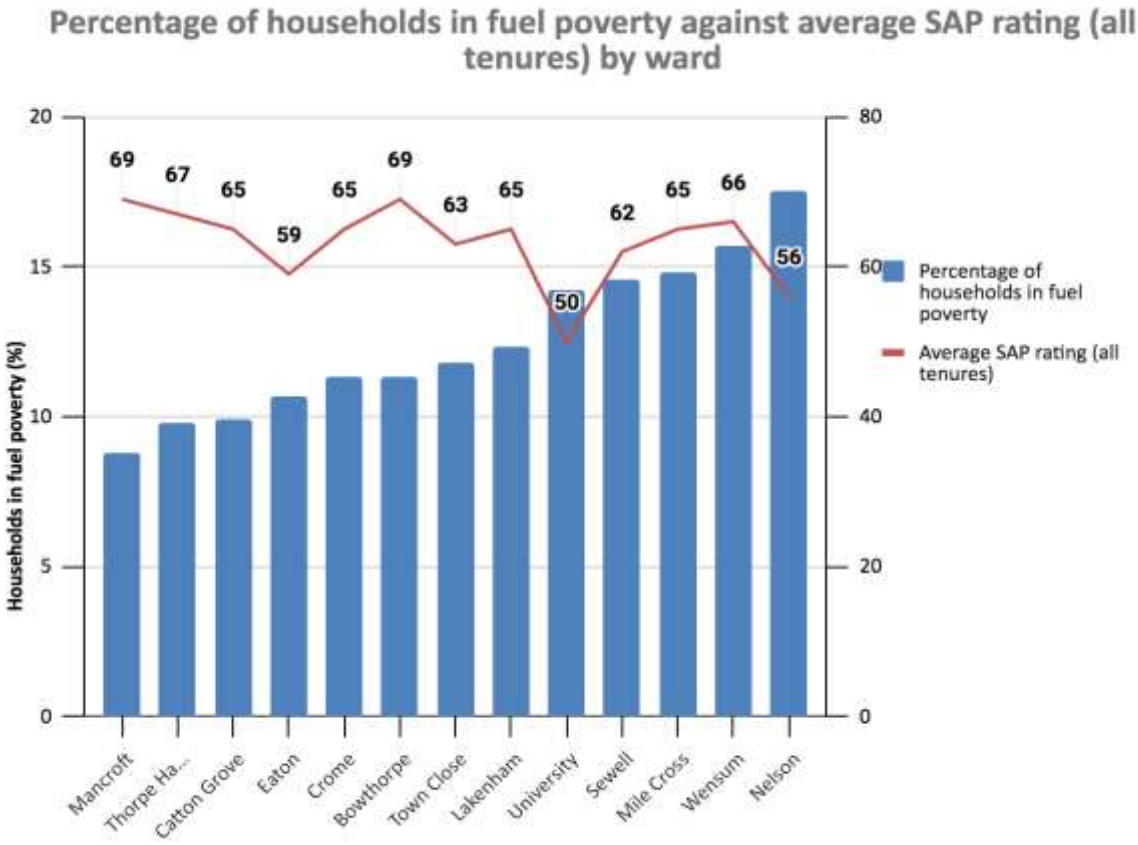
7.28 The energy efficiency of housing is measured using a SAP rating and when houses are sold they are awarded an Energy Performance Certificate (EPC) rating. Table 2 (below) shows how these two property energy efficiency ratings compare.

Table 2: EPC and SAP ratings – a comparison

EPC band	SAP rating Points
A	92-100 SAP points (Most efficient)
B	81-91 SAP points
C	69-80 SAP points
D	55-68 SAP points
E	39-54 SAP points
F	21-38 SAP points
G	1-20 SAP points (Least efficient)

7.29 Graph 15 shows the percentage of fuel poor households against the average SAP rating in each ward across all tenures: owner occupied, private rented and social housing.

Graph 15: % of households in fuel poverty vs SAP ratings



Source: DBEIS: 2020 sub-regional fuel poverty data: low income high costs indicator (2018)/Energy Saving Trust Modelling (2019)

7.30 ***What does it show?*** Generally speaking, Graph 15 shows that as the SAP rating decreases that the percentage of households in fuel poverty increases. However, this is across all tenure types. SAP ratings vary widely across tenure type. Historically SAP ratings have been lower in the private rented sector. Figures suggest that at a national level 17.7% of private rented properties are in fuel poverty compared to 8.3% in the owner occupied category[12]. Fuel poverty is the highest in the private rented sector.

7.31 With housing costs continuing to rise and wages not keeping pace the private rented sector looks set to continue to grow. There are now 4.5 million households in the private rented sector, which has doubled in size since 2002[13].

7.32 Fuel poor households privately renting a G EPC rated home would need, on average, to spend over £1,200 more on energy to heat their homes properly, and those renting EPC band F homes would need to spend over £700 more. This compares to less than £370 for those in bands E and above[14].

[12] BEIS: Fuel Poverty detailed tables (2018)

[13] DCLG: English Housing Survey headline report (2019)

[14] DECC: Private Rented Sector Energy Efficiency Regulations (Domestic) (England and Wales) (2014)

7.33 Since April 2018 there has been a requirement for any properties rented out in the private rented sector to achieve a minimum energy performance rating of E on an Energy Performance Certificate (EPC). It is unlawful to rent a property that breaches the requirement for a minimum E rating, unless there is an applicable exemption. A civil penalty of up to £4,000 will be imposed for breaches.

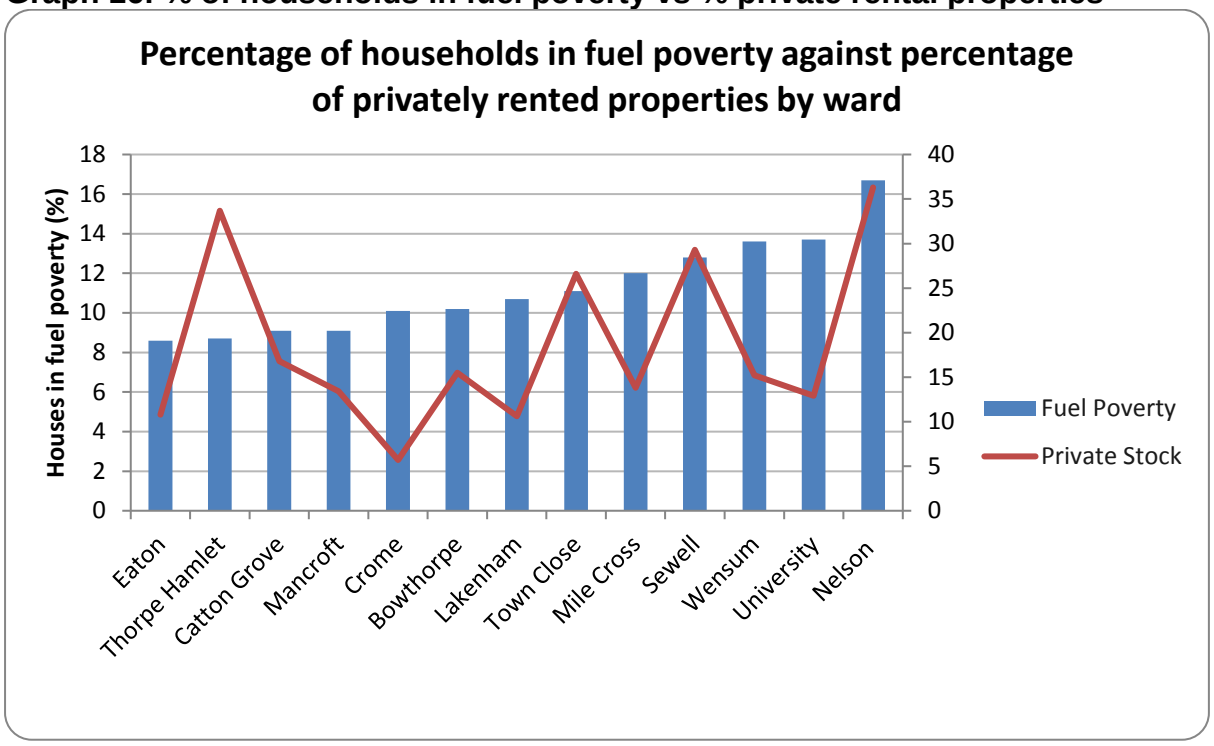
7.34 When the legislation was written it was expected that the Green Deal would be a tool to ensure that landlords were not faced with high upfront expenses and that through the Green Deal tenants would pay for the cost of energy efficiency installations through their energy bills. However the Green Deal has been scrapped, and ECO funding decreased. As well as this landlords whose costs exceed £3,500 are exempt from this legislation, despite recommendations from fuel poverty groups for the cap to be set at £5,000. This means some of the worst performing households are unlikely to see the level of investment required to improve their energy efficiency, and may still continue to suffer from the negative consequences of cold.

7.35 In August 2020 central government announced the Green Homes Grant voucher scheme, which allows homeowners to claim up to £5,000 for up to 2/3rds of the cost of an eligible measure. Some low-income homeowners can apply for a voucher covering 100% of the cost of the improvements. The maximum value of this voucher is £10,000. This scheme will run until March 2022.

7.36 We have been using our Cosy City scheme to advertise the Green Homes vouchers to residents, and signpost them towards these where appropriate. This has included advertising in the Citizen for the wider Cosy City scheme. The Green Homes Grant scheme is focused on the able to pay market whereas our fuel poverty work focuses more on low income households who may be eligible for ECO funding to fully cover the cost of insulation. Nevertheless we continue to signpost residents where appropriate.

7.37 Norwich City Council is aware of these minimum efficiency standards, and our private sector housing team leads on enforcement. The council provides general guidance about our standard on our website. We are developing our approach to enforcement and expect to take an intelligence-led approach to targeting in the future. Currently, however, we do not directly target landlords with lower rated properties. This is because the team is very small and is mostly dealing reactively to complaints or to the requirements of the HMO licensing scheme.

Graph 16: % of households in fuel poverty vs % private rental properties

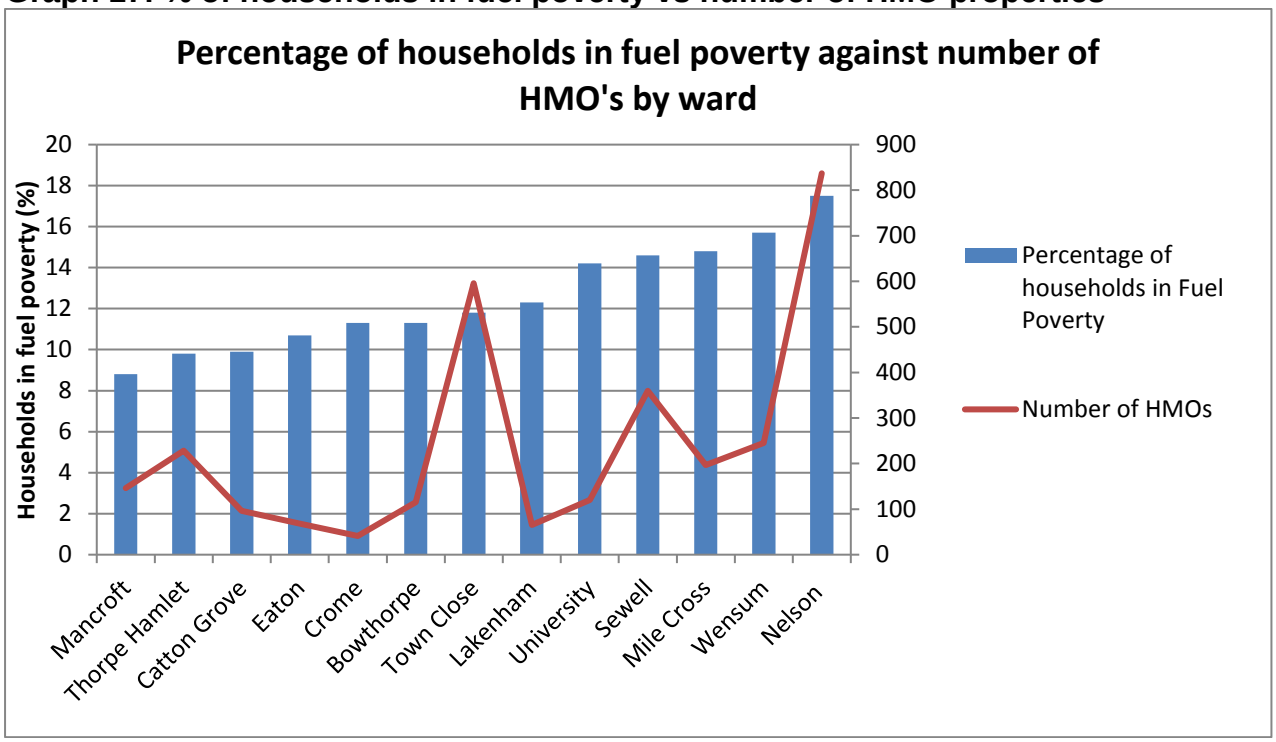


Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)/ Norfolk Insight (2020)

7.28 ***What does it show?*** Graph 16 (above) shows the percentage of households in fuel poverty against the percentage of privately rented properties by ward. There is no unequivocal relationship across all wards although Nelson Ward does show a high proportion of private rented stock and high fuel poverty.

7.29 Norwich is a university town and as such has a disproportionately high number of Houses of Multiple Occupation (HMO's) which are often in the private rented sector, with rooms being let out on an individual basis. The graph below shows the percentage of households in fuel poverty against the number of HMO's in that ward.

Graph 17: % of households in fuel poverty vs number of HMO properties

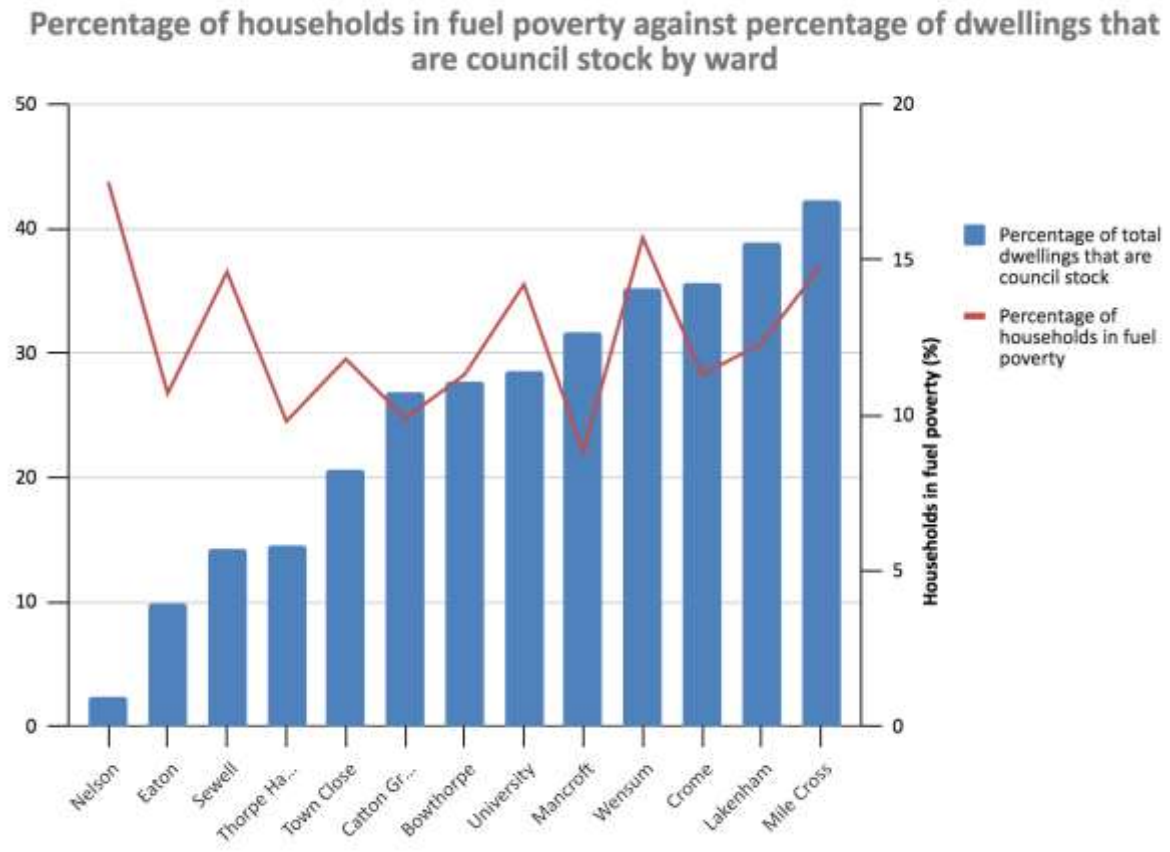


Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)/ BRE Stock Condition Survey (2014)

7.30 ***What does it show?*** As with the previous graph, Graph 17 shows no unequivocal relationship between HMO's and fuel poverty at a ward level. It is however interesting to note that the highest levels of HMO's fall in Nelson wards where the highest percentage of fuel poor households lie.

7.31 Finally, Norwich City Council has retained its housing stock of approximately 15,000 properties. Local Authorities are required to maintain their properties to a good living standard and as such the average SAP rating across the council housing stock is high at 70.94. This is an increase since our previous report. These higher levels of energy efficiency will be helpful in staving off fuel poverty amongst some of the most vulnerable of the city's residents, particularly those on a low income. The graph below shows fuel poverty against levels of council housing stock at a ward level.

Graph 18: % households in fuel poverty vs council stock levels



Source: DBEIS: 2018 sub-regional fuel poverty data: low income high costs indicator (2020)/ Norfolk Insight (2020)

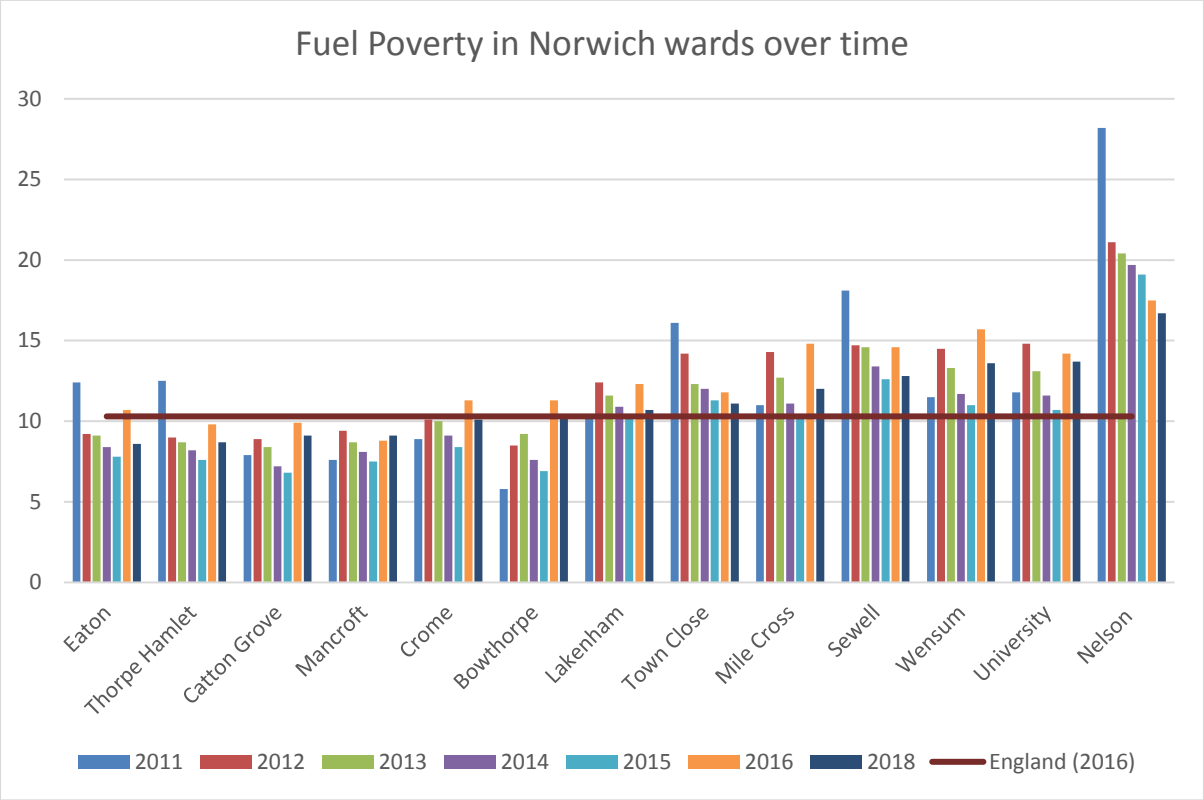
7.32 ***What does it show?*** The highest levels of council stock dwellings fall in Lakenham and Mile Cross wards where some of the lowest median levels of income are experienced. This is not surprising given the purpose of the council stock to support some of the most vulnerable residents. Equally the lowest levels of council stock are found in Eaton and Nelson wards, which experience the highest median level of income in the city.

7.33 The data would suggest that the high SAP ratings experienced in council owned properties is in fact supporting areas of low income which might be forced into fuel poverty if the fabric of their homes was not of such a high standard. Where there are low council stock levels the resulting fuel poverty is quite stark, despite higher income levels.

7.34 The data supports the council's decision to retain our housing stock at a time when many other local authorities chose not to. The average SAP rating of Norwich's 15,000+ council homes is 70.94, which is significantly higher than the private sector at 63. Without the decision to retain this important social asset it is likely that the number of homes experiencing fuel poverty in Norwich would be considerably increased.

7.35 Fuel poverty is a shifting picture and should be considered over time. Graph 19 (below) shows fuel poverty across all wards since 2011.

Graph 19: % of Norwich households in Fuel Poverty over time (LIHC indicator):



Source: DBEIS: 2018 sub-regional fuel poverty data (2020)

7.36 ***What does it show?*** The graph above shows the fuel poverty picture across the city since 2011. Almost all wards have shown a decrease since our previous report. We are not complacent and will continue to work to try to understand the individual fuel poverty picture in each ward, the factors that contribute to that picture and how to best work to alleviate fuel poverty.

7.37 At a national level the government is projecting a very slight increase in fuel poverty for 2019 and the council will need to wait to see how this plays out in Norwich. In the meantime the council continues to work to reduce fuel poverty at every opportunity. We also wait to see what impact Covid-19 will have on the figures, however, as income is one of the main drivers of fuel poverty, the economic impacts of the pandemic are likely to drive more people into fuel poverty, who may have lost income while also needing to spend more time at home, particularly those who are clinically vulnerable.

7.38 The graphs contained in this section are an overview of *some* of the factors that can influence whether a ward is in fuel poverty or not. Fuel Poverty is a complex problem and there is no single simple solution or quick fix.

7.39 The next section of this report will give further details of the initiatives the council has implemented to date to help lower energy costs, increase energy efficiency and support those most in need, including the fuel poor.

Section 8 – Council initiatives – what are we doing?

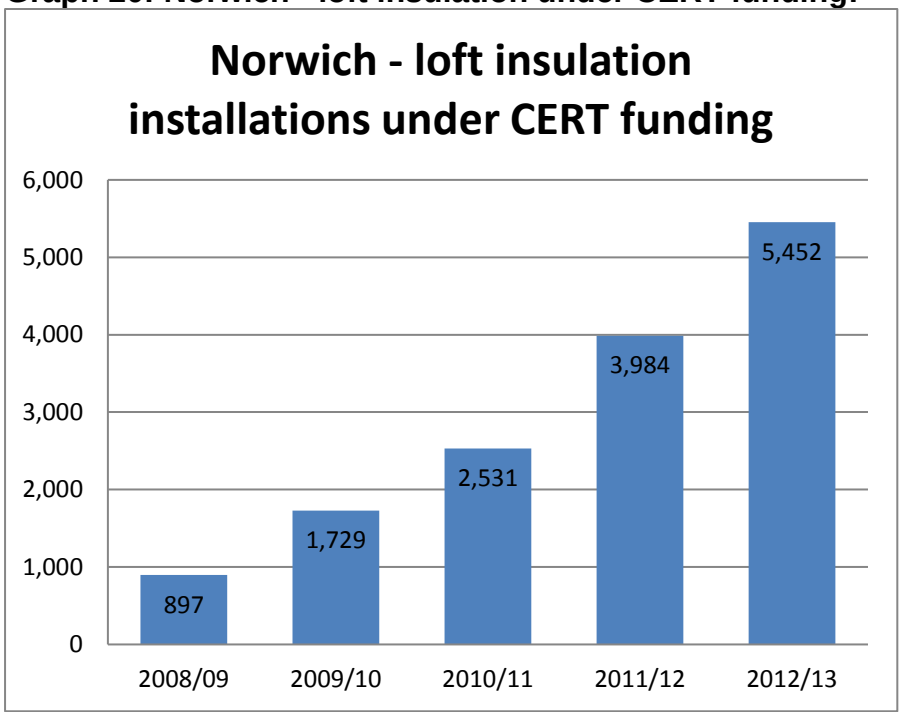
Energy efficiency measures:

8.1 As well as the effect of rising energy prices, some of the drop in domestic energy use can be attributed to an increase in energy efficiency in properties. In particular Norwich City Council has been working to install loft and cavity wall insulation across Norwich.

8.2 Loft insulation has historically been a more popular measure in Norwich than cavity wall insulation, which may be indicative of the large number of Victorian terraces, built before cavity walls became popular in the UK. Therefore, not all properties in Norwich have cavity walls. Cavity wall insulation also requires specialist equipment to install, so unlike Loft Insulation, is not a job for the diy-er. However, take up of loft insulation can also be impeded due to residents storing belongings in their loft space, which restricts the necessary access.

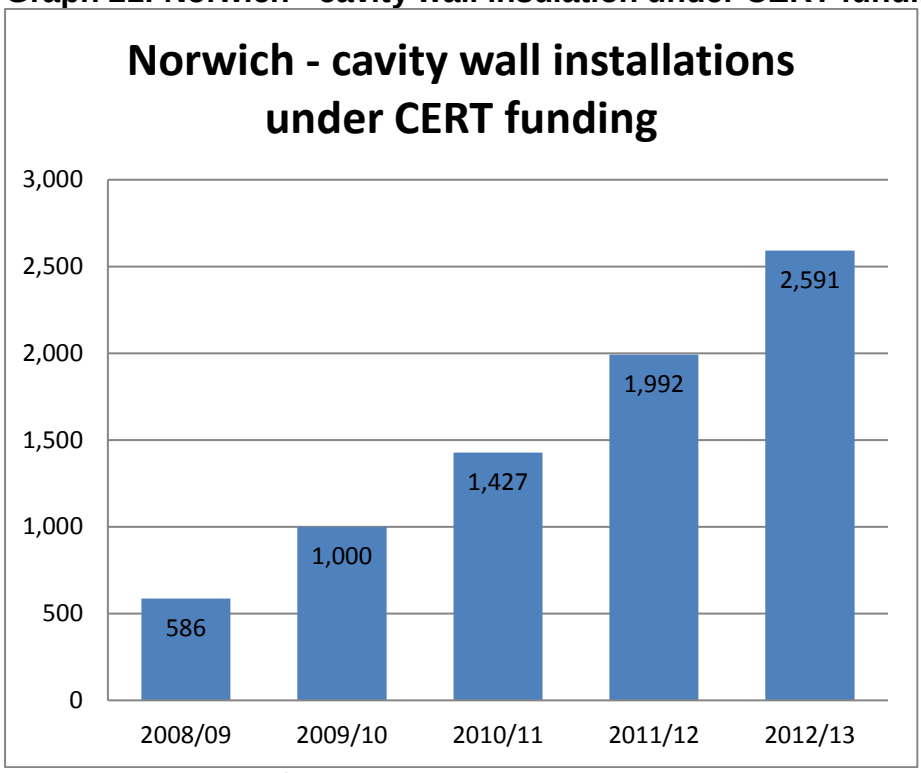
8.3 Within the private sector a significant proportion of properties are rental properties, which can restrict the take-up of home improvement measures since the landlord may be reluctant to pay to improve the thermal efficiency of the property when they will not benefit directly from a decrease in fuel bills, paid by their tenant.

Graph 20: Norwich - loft insulation under CERT funding:



Source: DECC: Interactive maps

Graph 21: Norwich - cavity wall insulation under CERT funding:



Source: DECC: Interactive maps

8.4 In 2013 CERT/CESP funding was scrapped and replaced with the Green Deal and Energy Company Obligation (ECO) funding. The Green Deal was a loan against the property which paid back directly from the savings made on energy bills. In principle it seemed advantageous to homeowners who could not afford the initial upfront capital to undertake energy efficiency works. However, in reality, loan rates were relatively high for homeowners when compared to the cost of mortgage-related borrowing and the Green Deal scheme has also been scrapped.

8.5 In April 2013 the Energy Company Obligation (ECO) was launched. This is a scheme which energy companies pay into and is used to improve households' energy efficiency. The first iteration of ECO funding had three elements to it; CSCO, CERO and HHCRO funded installations. Loosely speaking, the three elements funded different types of installations – HHRCO replacement boilers in privately owned households; CERO loft Insulation and cavity wall insulation in privately owned properties and CSCO solid wall, cavity wall and loft Insulation on social housing.

8.6 ECO2 (April 2015 – September 2018) then followed. This focused more on fuel poverty with HHCRO increasing from 36% of the funding to 70% and CSCO no longer being available. ECO2 introduced the 'flexible eligibility' mechanism, which allowed local authorities to determine eligible homes, representing up to 10% of suppliers Affordable Warmth Obligations. However, ECO2 saw the funding be reduced to £620 million per annum from £840 million per annum.

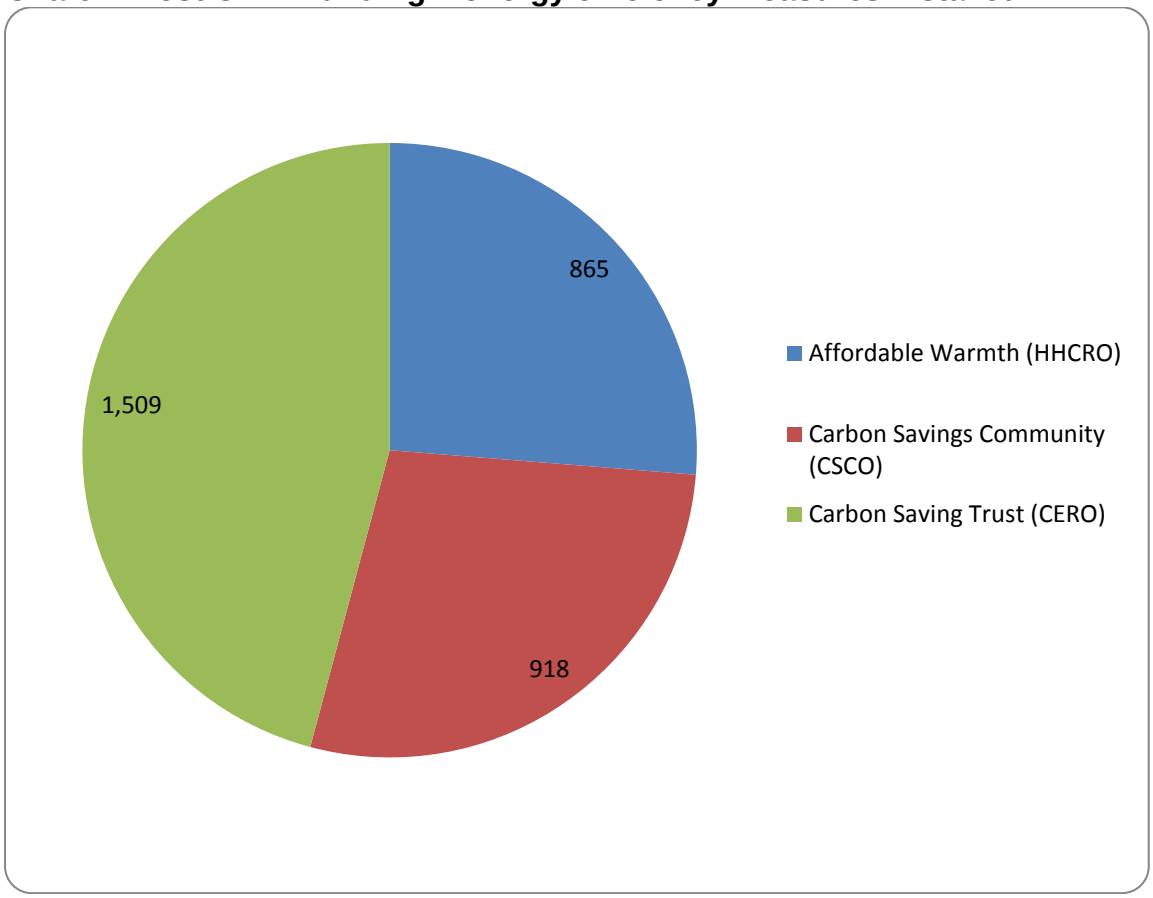
8.7 Our statement of intent, which allows the criteria for flexible eligibility, can be found here: https://www.norwich.gov.uk/downloads/file/3974/eco_flexible_eligibility_-_statement_of_intent

8.8 ECO3, the current iteration, was launched in Autumn 2018. The scheme now focuses entirely on Affordable Warmth rather than carbon savings, with the CERO funding also being removed. The local authority flexible eligibility component has been increased to 25%.

8.9 Norwich City Council employs a dedicated Affordable Warmth Officer who is able to act as a lynch-pin between residents in fuel poverty and accessing the relevant funding for dependent on their needs and situation. The Affordable Warmth Officer works closely with the Private Sector Housing team and in particular the Home Improvement team, sharing information and providing assistance to vulnerable residents.

8.1 Chart 1 (below) shows the figures to date for these types of installations fitted in Norwich.

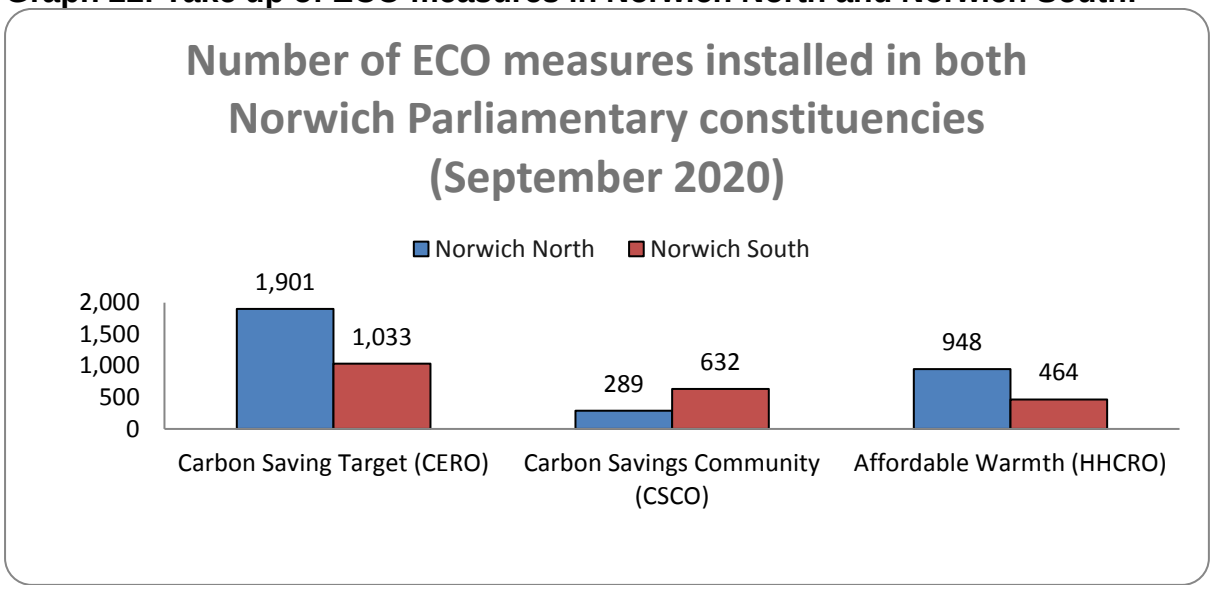
Chart 1: Post CERT funding – energy efficiency measures installed:



Source: DBEIS Household energy efficiency national statistics headline release (January 2021, reporting up to September 2020)

8.11 To date the majority of the ECO funding utilised has been from the CERO fund, predominantly funding loft and cavity wall insulation. This is the cheapest type of insulation and easiest to access. We will continue to monitor the funding landscape and promote ECO funding to residents of Norwich.

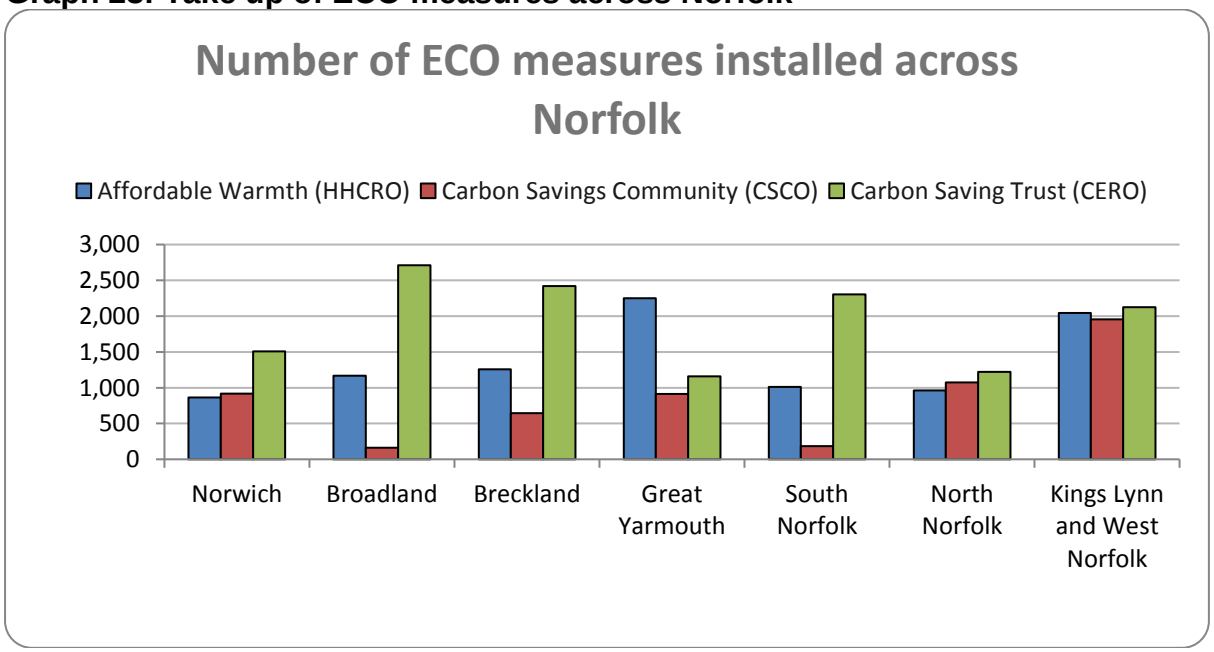
Graph 22: Take up of ECO measures in Norwich North and Norwich South:



Source: BEIS: Household Energy Efficiency National Statistics, detailed HEE tables (January 2021)

8.12 Graph 22 (above) shows that take-up of CERO funding has been far greater in Norwich North as compared to Norwich South, whereas CSCO funding has been more predominant in Norwich South.

Graph 23: Take up of ECO measures across Norfolk



Source: BEIS: Household Energy Efficiency National Statistics, detailed HEE tables (January 2021)

8.13 Graph 23 (above) compares measures installed across the region. As you can see Norwich has some of the highest levels of CSCO installations in the county. This is probably due to the high occurrence of terraced housing in Norwich.

8.14 However, the rest of the county sees, on the whole, a higher take up of the CERO commitment than Norwich. This discrepancy may be because Norwich has a higher social housing stock, and therefore funding was split across these tenures, whereas other local authorities in Norfolk have very low social housing stock and so have focused on the private sector.

Norwich's Cosy City project:

The Cosy City Project:

8.15 Cosy City is Norwich City Councils project to deliver ECO measures, in partnership with Aran Services Ltd, focusing particularly on cavity wall and loft insulation. This scheme works to improve energy efficiency, and reduce carbon emissions, across Norwich - www.cosycity.co.uk

8.16 We have used benefit data to send (anonymised) letters advising residents that they may be eligible for ECO measures, through the Cosy City scheme.

Measures delivered via Cosy City project:

GDAR and EPC assessments	350
SWI	68
Boiler replacements	72
Cavity wall and Loft insulation	270
Heating Upgrades	9
Boiler repairs	8
Small insulation measures	497
Total	**1254**

8.17 There is a high level of pre-1920's housing in Norwich with many rows of red-brick Victorian terraced houses. Unfortunately housing of this age does not have a cavity wall and the only way to provide effective insulation is via Solid Wall Insulation (SWI). SWI is an expensive means of insulating a property when compared to loft and cavity wall insulation and requires a specialist contractor. As part of the Cosy City project we helped to fund 67 properties to install SWI, providing grants of £5,800 towards the cost.

8.18 We have applied for, and been successful in securing, £715,750 from the Green Homes Grant Local Authority Delivery Scheme to improve 80 homes across Norwich (mixed tenure). This includes £650,000 for capital works, £48,750 to administrative costs and the rest to ancillary measures. This will be 50 owner-occupier homes and 30 socially rented properties. Owner occupied homes will receive solid/external wall insulation with a particular focus on ex social housing. This will focus on steel prefabricated homes without external cladding and ex-social housing without solid wall insulation. Our own properties will receive solar thermodynamic systems or solar pv depending on the fuel needs of the homes.

8.19 Cosy City has provided help to 89 residents to access funding for boiler replacements, repairs and heating upgrades. The majority of these residents are amongst the most fuel poor and vulnerable residents in Norwich. Cosy City has also provided help to insulate lofts and cavity walls in over 200 properties.

8.20 Over time the council hopes to see SAP rating improvements within the private housing sector but domestic energy efficiency funding is limited, with the removal of the Green Deal Finance Company and the Green Deal Home Improvement Fund and the reduction in ECO funding. The council will still continue to help residents access available funding and work to increase SAP ratings across the city.

Warm and Well:

8.21 The Norwich Tradesmen's Benevolent Fund is a small pot of funding which the council has been fortunate to have been awarded in recent years. The funding has been used to help the most vulnerable Norwich residents to weather the cold winter months.

8.22 8It is used for urgent heating need, winter packs and repairing heating breakdowns. Combined with the switch and save revenue it has helped many residents in desperate heating need. Our warm and well packs include thermal clothes, blankets and soup.

Example Warm and Well pack

8.23 The fund is also used to provide small energy efficiency measures such as draught proofing and radiator foil, which help reduce the resident's fuel bills by 5%. In 2019/20 over 200 residents received small measures. We also provide emergency heating in the form of radiator loans to residents without central heating.

8.24 The council works to help residents access appropriate funding for their heating repairs including grants to prevent admission to hospital due to cold homes and home improvement loans, however these are subject to availability and eligibility.

Advice and Support:

8.25 .8In addition to the above projects the council continues to support residents with fuel poverty advice. This includes the annual Winter Wellbeing event that brings together affordable warmth groups to promote their services to stakeholders.

Warm and Well stakeholder event 2016

8.26 Although in 2019 we held another successful event, with 40 attendees from a variety of local authorities and third sector organisations, the 2020 event was cancelled due to COVID-19 restrictions.

8.27 Our Affordable Warmth Officer advises residents on how to save energy within the homes, including benefit advice and trust funds for fuel debt, as well as supporting any dispute the resident has with a supplier. Our officer works with residents to reduce fuel debts and with teams within the council, including specialist support and private sector housing, to provide 1:1 support where appropriate. We communicate this advice in a variety of ways, including energy saving packs with information on reducing fuel bills, face-to-face advice and targeted letter campaigns. These packs have been sent out directly to residents in our most fuel poor wards, and are given to residents at roadshows. All of our tools, schemes and support are coordinated by our Affordable Warmth Officer.

Big Switch and Save:

8.28 Norwich City Council was the second local authority in the UK to introduce collective energy switching in 2012 and since then we have promoted 15 tranches of this scheme. The scheme works to secure lower energy tariffs for switchers by harnessing the power of collective purchasing. Different suppliers bid against each other in a reverse auction, to be able to access the registrants, driving prices down.

8.29 To date the council has supported over 4,000 switches to cheaper energy tariffs, with average savings of over £200 per household per year. For each switch the council receives a small switching fee which is ring-fenced to affordable warmth work and enables us to support the most vulnerable households at times of extreme need.

8.30 This scheme is open to all residents in the city, including those without access to the internet, who may be unable or unsure of how to find the best deal, and those on pre-payment meters, who may be struggling with high bills.

8.31 Our team is able to register offline residents who are unable to access many tariffs. This scheme encourages residents to move away from high cost standard tariffs to more affordable fixed price tariffs.

8.32 The Big Switch and Save is a partnership between Norwich City Council and iChoosr, a business specialising in reverse auctions and collective switching.

8.33 This collective switching scheme now only allows suppliers offering 100% renewable electricity to enter ensuring residents save money and reduce their carbon emissions. So far £770,000 and 410 tonnes of CO_2 have been saved by switching.

8.34 Resident Switch and Save feedback:

8.34.1 “The Norwich Switch and Save has made me feel more confident when dealing with the energy company. Just knowing that there is support out there makes me feel reassured. I had never switched before and I was scared with dealing with my fuel bills but now I switch every year with the council. They have made it easier for me. I now feel more confident in my home when I use electricity and gas.”- **Mrs B**

8.34.2 ‘I’m definitely less worried about my bills now. Switching with the council was easy because the work gets done for you. I’ve been inspired to switch with some of my other bills too’ – **Mr H**

.34.2 ‘I couldn’t be more pleased with it. Something came through my door to tell me about it. I’d never switched my energy provider before but I thought I would give it a go. I haven’t got a computer so I rang up and someone helped me register I was surprised how easy it was. – **Mr K**

8.34.3 ‘The process was easy to follow from the entering of details through to the changing of energy contracts, saving us money on both our gas and electricity’ – **Mr W**

8.34.4 ‘The process was made very easy from the start. I would highly recommend the service which I received’ – **Mr M**

Smart meters:

8.35 Norwich City Council has previously used funding from Smart Energy GB to promote smart meters in the city through community events and workshops. We specifically targeted vulnerable residents and offered residents confused by their smart meters additional in-home support from our trained smart meter champions. While we do not actively promote smart meters as part of our fuel poverty work advice and information is provided when requested.

8.36 If further funding becomes available for smart meter work we will use this to promote smart meters across Norwich.

8.37 The council currently has a contract with British Gas to supply our void properties. This does not include an agreement to install smart meters.

Working in partnership with the health sector:

8.38 Norwich City Council works with the Norwich Clinical Commissioning Group and Norfolk County Council’s public health team through the Healthy Norwich partnership to target fuel poverty support at vulnerable households, particularly those where people are suffering from health conditions which make them more susceptible to the cold.

8.39 Through this partnership the council has engaged a range of health professionals and voluntary and community organisations to promote the affordable warmth and wider healthy homes services that the council offers.

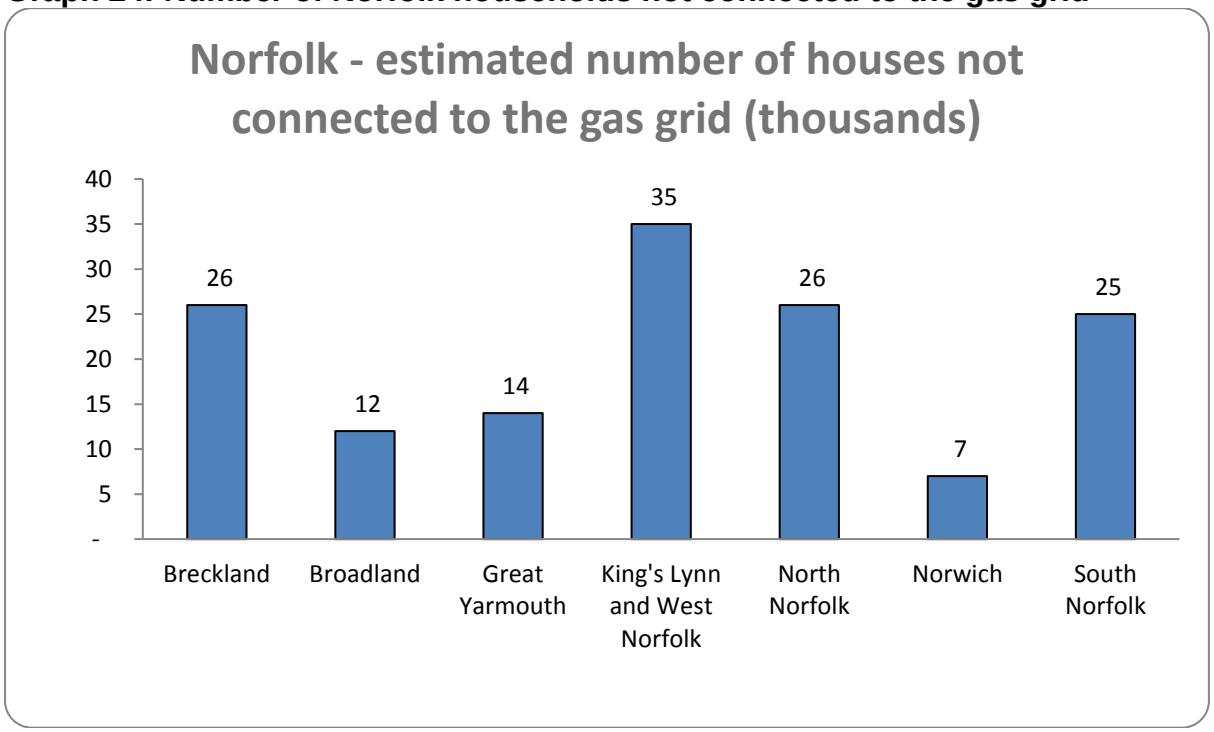
Working in partnership with the Warm Homes Fund:

8.40 In 2018 a joint bid by Norfolk County Councils, led by Broadland District Council, was awarded £3.1 million by Affordable Warmth Solutions to install first time central heating in residences across Norfolk. Central heating, particularly from gas boilers, is much more cost effective than off-gas alternatives such as electric storage heating, due to lower unit rates. Therefore this scheme will hopefully reduce fuel bills across Norfolk. The Warm Homes team will also be helping people switch suppliers onto better deals and access certain benefits, such as Attendance Allowance, to maximise people's income.

8.41 Norwich City Council is working with Broadland District Council to help deliver this project and is focusing on the Templemere estate in Norwich, which has over 100 households without a connection to mains gas. As Norwich significantly less off gas households than other Norfolk councils (see Graph 24, below) we decided to focus on this large project rather than targeting individual households. Nevertheless the council is still connecting eligible residents to this fund when appropriate. These installations will all be funded by Affordable Warmth Solutions.

8.42 75 homes have had grants approved, with, as of January 2021, 42 installed. The Warm Homes Team expects all installations to be completed by May 2021. Overall £322,535.34 has been invested into this estate, plus £800,000 in installing new mains gas lines throughout the estate. The council will continue to work with the Warm Homes Team until August 2021, when the funding is scheduled to end.

Graph 24: Number of Norfolk households not connected to the gas grid



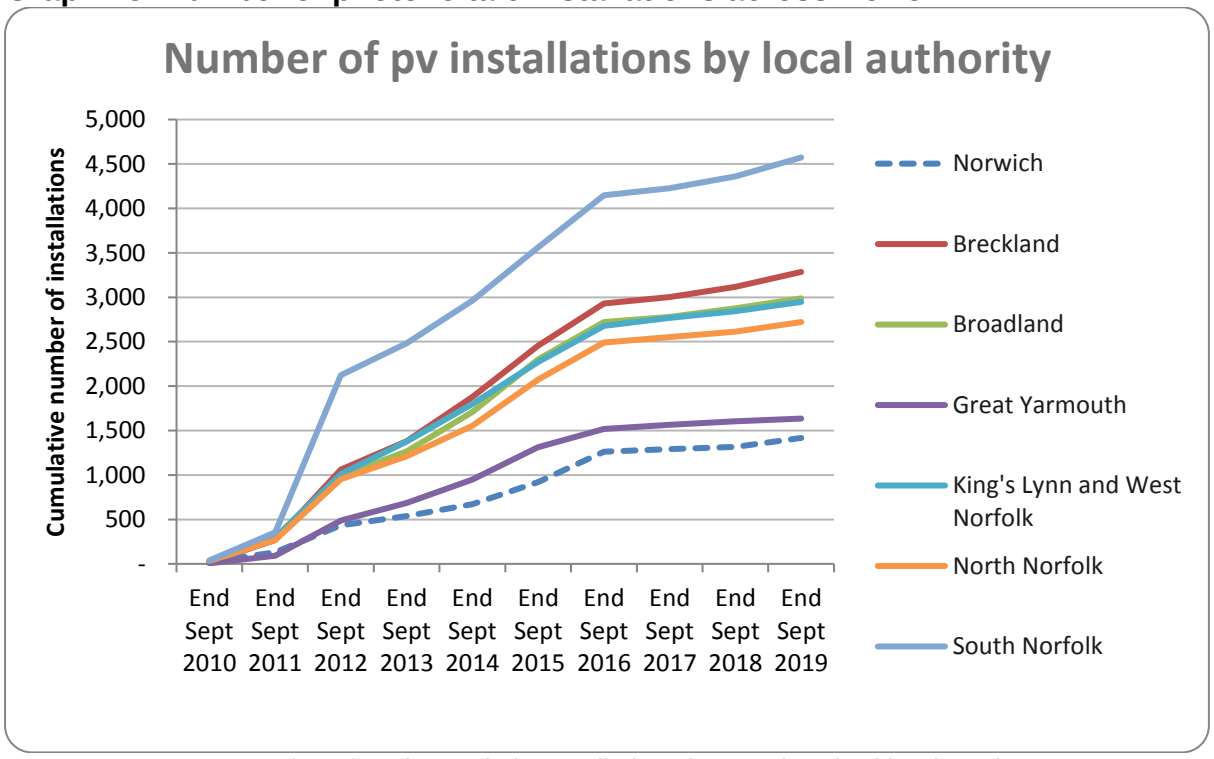
Source: DBEIS: Sub-national estimates of households not connected to the gas network (2020)

Renewable energy:

8.43 In the city renewable energy on domestic properties largely takes the form of photovoltaic (pv), or solar panels on rooftops. There is some uptake of air source heat pumps and solar thermal panels for heating water, but these are the exception rather than the rule. Norwich is predominantly on the gas grid and therefore compared with the installation of either air source heat pumps or ground source heat pumps (which require sufficient land to lay the pipework) connecting to the gas grid, whilst not renewable, is comparatively cheap.

8.44 This is not the case in many rural local authorities in Norfolk, which are predominantly off-gas grid properties and must therefore source their heat via open fires, electrical heaters or oil-fuelled central heating. Properties that rely on oil for their heating have seen oil prices spiral over recent years and it has begun to make better financial sense to invest in alternative technologies such as renewables. Consequently the uptake of renewables in rural local authorities has far outstripped the uptake in the city; this can be seen in Graph 25 which shows the uptake of pv cells across the county.

Graph 25: Number of photovoltaic installations across Norfolk

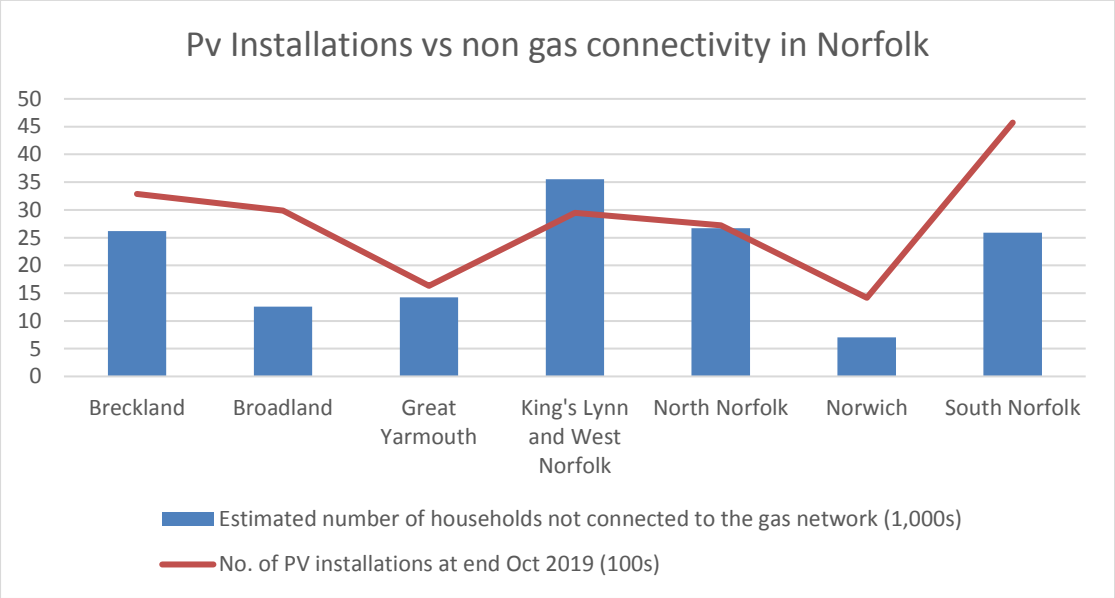


Source: DBEIS: Domestic Solar Photovoltaic Installations by Local Authorities (2020)

8.45 ***What does it show?*** Solar power has been slow to take up in the city for a number of reasons and Norwich has fallen behind the rest of the county. Norwich is a historical city and some properties in conservation areas are not suitable for solar panels, in addition there are pockets of deprivation where the technology is prohibitively expensive and there are a high percentage of residents living in rented accommodation where pv installation is not an option.

8.46 Graph 26 (below) shows both South Norfolk and Breckland have the highest levels of pv installations in the county, with King's Lynn and West Norfolk lying in 4th place, with significantly more pv installations than in Norwich. This largely mirrors the pattern of non-connectivity across Norfolk.

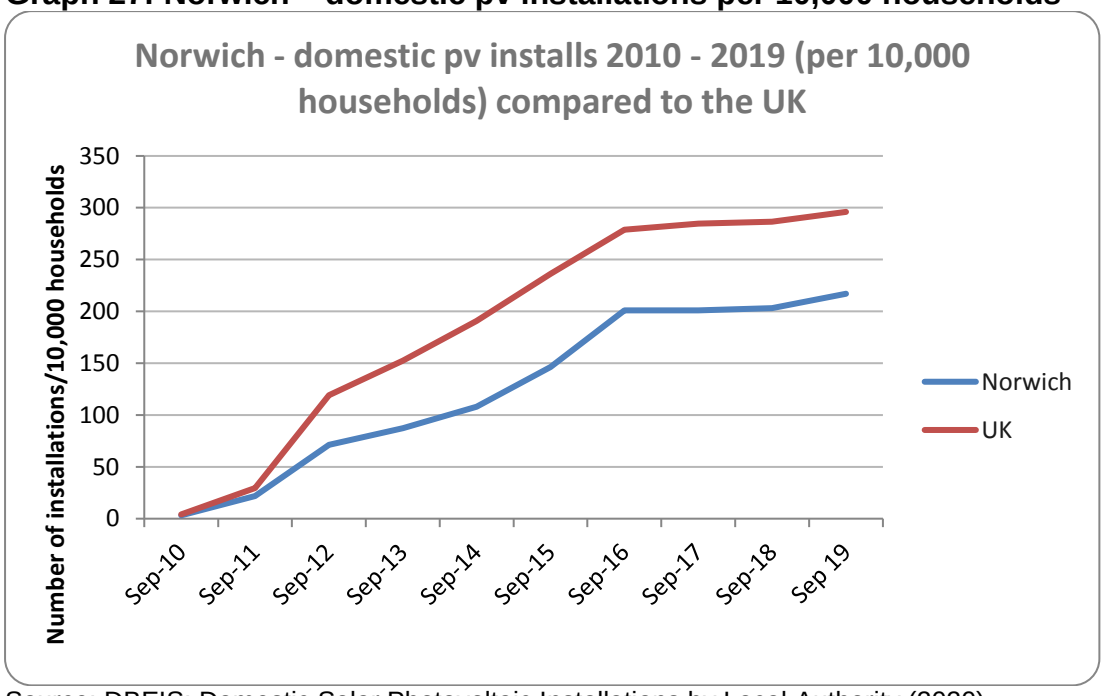
Graph 26: Norfolk pv installations vs non-connectivity to the gas grid



Source: DBEIS: Domestic Solar Photovoltaic Installations by Local Authority (2020)/ DBEIS: Sub-national estimates of households not connected to the gas network (2020)

8.47 In Norwich the number of domestic pv arrays has been steadily increasing over time, but it is still below the rest of the county or the UK average. Graph 27 shows the rate of uptake of pv cells in Norwich as compared to the UK average.

Graph 27: Norwich – domestic pv installations per 10,000 households



Source: DBEIS: Domestic Solar Photovoltaic Installations by Local Authority (2020)

8.48 ***What does it show?*** Norwich has fallen well behind the national average number of pv installations. We believe this may be due to a number of factors, including: the historically high cost of installations, the historical nature and conservation status of some of the buildings in the city, the high level of rental properties in the city and the high number of properties in the city already serviced by the gas grid.

8.49 There is a slight upturn in pv installation numbers in the city in 2015/16. This may in part be influenced by the council's successful Solar Together project and the proposed decrease in the Feed in Tariff (FIT) as homeowners scramble to make the most of the higher rate. However this was followed by a significant slowdown in installations – which may be due to the large reduction in the FIT.

Solar Together:

8.50 In May 2015 Norwich City Council in partnership with Broadland, South Norfolk and North Norfolk local authorities, joined forces with iChoosr to run the UK's first ever collective solar scheme. A reverse auction process was held and Job Worth Doing were chosen as the successful contractor. Due to the competitive bidding process the prices secured on panels and installation was lower than the going market rate for the same work. Consequently 613 installations were completed by the end of 2015, with nearly 8,000 panels being fitted and a potential of 2MW of solar pv energy. Over 900 tonnes of CO_2 will be avoided annually due to this project.

8.51 Unfortunately, in August 2015 central government went out to consultation to reduce the (then) Feed in Tariff rate from 12.47pence/kWh to a proposed 4.39 pence/kWh rate.

8.52 Whilst the scheme was successful for the 7 months in which it ran, it was felt that the severe cut to the FIT was such that the business model was no longer a viable one. Graph 25 begins to show an upturn in the take up of pv installations around September 2015. This is likely due to a combination of an increase in demand in the city due to the Solar Together scheme and as a result of the proposed decrease in the FIT rate.

8.53 Following the government decision to remove the FIT entirely it was decided to run a second Solar Together scheme in Summer 2018, in order to give homeowners a final opportunity to take advantage of the FIT. For this iteration of the scheme Norwich City Council worked in partnership with iChoosr and Broadland District Council. Without South and North Norfolk the scheme was not able to access a lot of the most suitable properties in Norfolk. However we still saw 790 registrations (85% from Norwich City Council), with 114kw of power installed, saving 32 tonnes of CO_2.

8.54 Despite the removal of FIT the council decided to go ahead with a further Solar Together scheme in Summer 2020 in order to help residents who wished to install solar pv. We targeted homeowners in high council tax bands and saw an additional 700 registrations.

8.55 For the first time Solar Together was able to offer battery storage to residents, with 1/3rd saving of the market price. Overall the scheme has invested £2.1 million in Norfolk and avoided 1,800 tonnes of CO_2.

CO_2 emissions from our own estate (National Indicator 185):

8.56 Norwich City Council has reduced carbon dioxide emissions across its operations and estate for the past 13 years through our carbon management programme. For the period 1 April 2019 to 31 March 2020 a further reduction of 2.5% in the council's carbon footprint was achieved. This takes the total reduction in carbon emissions to 62.1% (against the 2007 baseline).

8.57 This has been achieved through a variety of methods including:

- Voltage optimisation
- PC power down
- Server virtualisation
- Installation of variable speed drives
- LED lighting upgrades
- Boiler valve and pipework insulation
- Staff behaviour change campaign
- Photovoltaic arrays
- Community engagement

8.58 Our most recent carbon footprint analysis (2019/20) shows increases in contractors' energy use, both gas and electricity. This is due to more robust and accurate reporting methods. As the council brings more contractors in-house it is hoped that it will be possible to facilitate greater emissions reporting accuracy as the council will have more access and control over the sources of data.

8.59 However there has been a drop in contractor fuel use, likely due to a drop in miles covered during the period, which suggests that this trend will continue significantly in the next reporting year, where contractors have been subject to Covid-19 restrictions. Another contractor has also reported that they are switching away from diesel vehicles early in 2021 to hybrid vehicles. If this is seen across other contractors, as they draw closer to the government's target to ban all new petrol and diesel vehicles from 2030, the council should expect to see a reduction in all fuel emissions over time.

8.60 There has been a 7.2% decrease in gas use in council owned assets. Sheltered housing schemes, by the very nature of the needs of their residents, are one of our largest gas consumers. The council continues to upgrade boiler houses and retrofit energy efficient technology wherever possible.

8.61 Many schemes have had variable speed pumps, loft space pipework insulation, boiler upgrades, smarter controls, and valve and flange insulation fitted, and some have had underground pipework insulation retrofitted too.

8.62 Our asset portfolio is wide and varied, containing a brand new purpose built multi-storey car park where energy efficiency was built into the design, to a 15th century Grade II Listed monastery (now used a premium event space), where we have needed to sensitively retro-fit energy efficient technologies.

8.63 Some of these assets, such as City Hall, have extreme technological challenges to the adoption of renewable energy and may struggle to become a net zero asset. Since our previous report the council has committed to becoming net zero carbon by 2030. Therefore the council has started using carbon offsetting as part of our carbon reduction journey.

8.64 In 2019/20 21 tonnes CO_2e. was offset. The scheme selected is independently verified for quality assurance and meets BSI PAS 2060. The scheme supports tree planting in the east of England, which in turn creates valuable habitats for wildlife, whilst sequestering carbon emissions.

8.65 In addition to the green tariff, which we moved to in 2016, and the use of carbon offsetting, the council will continue to seek opportunities to implement energy saving technologies on our assets. The council will also continue to work with our contractors to encourage them to reduce the carbon emissions they produce whilst carrying out work on council contracts.

8.66 We of course expect Covid-19 to impact our 2020/21 reporting. A number of our assets have been closed for the majority of 2020, and staff numbers at City Hall have been reduced.

Future projects and project development:

8.67 The council has committed significant funding to the retrofitting programme since 2008. The range of energy saving projects have been innovative and diverse. From IT auto shutdown software to intelligent low energy LED retrofitting and renewables, as well as a building rationalisation programme; these projects have reduced carbon emissions as well as cost.

8.68 The council has received grant funding from a decarbonisation fund to further develop energy savings projects at assets including City Hall. These include the use of renewables. In addition, plans are in place for the following:

- Installing EV charges for fleet use
- New energy efficient servers
- New smart LED connected lighting at St Giles MSCP
- Further LED retrofitting at the halls
- Further LED retrofitting in landlord lighting/ parks
- Continued development of renewables and battery storage.

8.69 Administration costs for our carbon management work to be met from existing staff budgets.

8.70 While delivering the scheme we have learnt that in order to make the biggest difference close monitoring of your energy data is vital. Technology is always changing and the council has needed to revisit energy saving projects from as recently as five years ago in the light of new technology. Our car park lighting is a case in point where we are looking to install smart LED lighting which will dim up and down according to need. Unfortunately it is not always possible to be as proactive as we might like when reactive work, such as a boiler breakdown in sheltered housing, takes priority over planned, proactive work, such as insulation.

One Planet Norwich:

8.71 In 2015 the One Planet Norwich work-stream was introduced. The aim of One Planet Norwich is to look further afield than the council's own estate and to actively engage with Norwich residents about ways they can make small changes to their lifestyles to reduce their carbon emissions through a variety of ways. One of these is through raising awareness of energy use and the savings that can be made through fitting energy efficiency measures to their housing and where funding might be available to help with this. The project aims to engage in a fun and accessible way. We utilise social media and our annual One Planet Norwich festival to raise awareness in Norwich. To date the council has organised five One Planet Norwich festivals with a total attendance of over 36,000 visitors. Unfortunately our latest festival was cancelled due to COVID-19 but we continue to inform and engage with residents through our social media page. Since August 2020 our posts reached over 25,000 unique users.

Photo: Eco Snakes and Ladders – Having fun and challenging perceptions around resource use


Photo: Recycled plastic fashion show – A fun way of showing what can be done with old fabric

CO_2 emissions from our Council housing stock

8.72 The council has strived to maintain the council's housing stock to levels which help to ensure that our tenants have warm and comfortable homes. As part of this drive the council continues to look for opportunities to increase the energy efficiency of the housing stock. Table 3 (below) lists some of the technologies employed to date to assist this.

Table 3: Renewable technologies in council stock

Applied Renewable Technologies	Total Installations to date	What the technology does
Photovoltaics	139	Free electrical power from the sun
Solar Thermal	8	Free hot water from the sun
Voltage Optimisation	363	Lowers domestic electrical consumption
Air source heat pump	2	Creates energy efficient central heating
Loft insulation (over 200mm)	6220	Helps to stop warmth escaping through the loft
External Wall Insulation	426 installed, 472 programmed	Helps to stop warmth escaping through the walls of a house, where there is no cavity in pre 1920's houses
Gas condensing boilers	10846	Energy efficient gas fired central heating boilers
Thermal dynamic hot water systems	547	Provides very low cost, energy efficient 24 hour a day, every day, hot water.

8.73 The current average SAP rating of the council's housing stock is 70.94 across over 15,000 homes. This equates to a solid C rating and compares favourably with the private sector SAP rating of 63.

8.74 Since the removal of grant assisted funding regretfully less homes have been able to benefit from the installation of loft and cavity wall insulation, boilers and controls and external wall insulation (EWI).

Council Homes – new build:

8.75 The council has completed the Goldsmith Street development (105 properties), the largest development of Passivhaus in the UK, all of which is being let as social housing. Norwich City Council was awarded the Stirling Prize for Architecture for this development: https://www.architecture.com/awards-and-competitions-landing-page/awards/riba-stirling-prize

Council Homes – adapting our stock:

8.76 The council is adapting to changing tenant needs and strives to maintain and improve our housing stock. As old energy-inefficient stock is disposed of, so new energy efficient stock is built or purchased. Family dynamics are changing over time with more smaller family units being required. To reflect this changing need the council has converted some of our 3 bedroom homes into more suitable flats. We are working to anticipate and accommodate the changing needs of today's family groups using a housing stock predominantly built between 1930 and 1970 which contains a high percentage of 3 bedroom semi-detached properties. We are also exploring the possibility of converting commercial assets into residential properties.

Contractor responsibilities:

8.77 All contractors working on a contract over £300,000 are required to have a SWMP. This is a legal document and the company can incur large fines if there is not a SWMP in place on a contract. The contractor is also responsible for maintaining an audit trail of what percentage of waste is disposed and recycled. There are also Green Travel plans which enforce the need to use a minimal number of vehicles when on site and to use those vans most effectively to ensure there are enough materials contained within the vehicles to complete the jobs for the day in order to minimise the number of journeys. All our current contractors have SWMPs in place.

8.78 High-value contracts contractors are also required to report their carbon emissions to the council annually which are then reported into central government as part of the council's overall carbon footprint.

CO_2 emissions from Private Sector Housing

Private sector housing – enforcement work

8.79 Norwich City Council tackles excess cold in privately rented accommodation through enforcement. The private sector housing team comprises of three private sector housing officers (one of which is the team leader). The majority of cases are in response to complaints; however, the address-level information from our stock condition survey enables us to target this enforcement activity more effectively.

8.80 Proactive work includes:

- Rolling programme of inspections
- Area based inspections

Home improvement team

8.81 In addition to the enforcement work of the private sector housing team, our home improvement team is also able to tackle excess cold. The team receives referrals from homeowners, private tenants and housing association tenants, as well as health and social care providers, requiring disabled adaptations, our handyperson service, access to our hospital discharge grants and home improvement loans.

8.82 Our case workers and handyperson engineers carry out a home risk assessment to identify any other issues in the property, including inadequate heating, poor insulation etc. Through our financial assistance policy, which offers a number of grants and loans, the council, is able to help clients to improve their property and remove excess cold hazards.

Section 9 - What did we achieve?

Progress against Action Plans:

Priority	Proposal	Timescale	2017 Update	2019 Update	2021 Update
Building relationships	Networking with the Big 6 Energy Providers	Ongoing	Currently this has not come to fruition due to changing Eco targets. But we continue to monitor for opportunities and have ring-fenced £800,000 for work on Normandie Tower flats.	Tower block upgrades, focussing around fire safety, were started following recent horrific events. The council are installing updated fire doors to all homes within tower blocks including to leasehold homes.	We continue to network with Energy Providers and have entered into white label partnership with Octopus Energy.
	Working alongside Income Assistants to find tenants who may be in poverty Working with vulnerable residents to assist them to get them the best energy deals, even on pre-payment meters	Ongoing	We continue to improve links across our services to ensure comprehensive support to those in most need.	We continue to improve links across our services to ensure comprehensive support to those in most need.	We continue to improve links across our services to ensure comprehensive support to those in most need. We have provided fuel poverty training to officers in the Income Team.
	Assisting with reports and supplying data to the Environmental Strategy team	Ongoing	Continuing to work across council services and with major contractors to assimilate energy data.	Continuing to work across council services and with major contractors to assimilate energy data.	Continuing to work across council services and with major contractors to assimilate energy data.

	Tenant involvement by producing documentation on energy saving, tenant fun days & liaising with tenants regarding their energy bills	Ongoing.	Ongoing.	Ongoing.	Ongoing. We have placed energy saving information in TLC which goes out to all council tenants.
Building relationships cont.	Digital inclusion project – enabling residents to make use of lower energy tariffs and deals via online billing	2017 onwards	n/a	Continuing to work with the digital inclusion team to promote our switching scheme and helping residents' access online billing. Our fuel poverty officer sits on the Digital Inclusion working group.	Continuing to work with the digital inclusion team to promote our switching scheme and helping residents' access online billing. Our fuel poverty officer sits on the Digital Inclusion working group.
Trial projects	**Damp Trial** – 6 month trial to reduce spend and investigate alternative methods alleviate damp within our homes. The trailing out of new products such as single, whole house ventilation and continuous running extractor fans working with the market leaders.		The Materials Selection Group have selected the Cy-Fan and it has been installed where required. This solution will be fitted during responsive and planned works where appropriate.	n/a	Working with NPS to ensure that when fuel poverty issues are flagged during damp surveys the Affordable Warmth Officer is informed.

Trial projects cont.	**Air source heat pumps –** to carry out a trial		Trialled 2 units. Research concluded that this technology was most efficient where gas connectivity was available and dependent on the tenants demand for heat during the day.	We currently have one unit within the housing stock (one sold through right to buy), and do not have any further plans for this to increase due to the type of control over the heating produced. With all housing stock being on-grid, there is little need to consider this heating approach.	n/a
	Thermodynamic hot water – potential trial of this technology that can provide hot water 365 days of the year, using a local company.		148 units installed to date and ongoing. Where homes too small for tank required some airing cupboard expansion has been carried out. Currently trialling loft-space system for smaller properties.	547 units have been installed 641 homes in total benefit from this technology. This technology is proving very effective at reducing tenant expenditure on hot water requirement and presenting tangible benefits to reduce fuel poverty.	
	Voltage Optimisation – to install c.500 units into our housing stock	2013/14	363 installations completed. Unfortunately, supply chain has currently	We investigated alternative units, after the voltage optimisation	n/a

			run-dry, but we await update.	company no longer traded, however the impetus for such technology was not forthcoming.	
	Council vehicle fleet refresh and reduction	2017 and reviewed regularly	n/a	The council's fleet has been reviewed and rationalised, it is now smaller and cleaner with electric hybrid vehicles replacing some petrol and diesel vehicles.	In the process of reviewing pool fleet usage and potentially removing some cars from the fleet.
	EWI – installation to c.82 properties with potential to deliver up to 200 properties by accessing ECO funding.	2013-18	489 installations of EWI completed. The most energy inefficient homes are targeted at a rate of approximatel y 50 installations per year.	The delivery programme will include a further 173 houses but they require structural improvements before this work can be carried out.	Green Homes Grant funding will improve 50 private sector homes in Norwich with EWI
	IWI – following the trial, investigate opportunities to complete the block using ECO funding	2013-18	No funding available unfortunately.	This methodology for insulating homes is very difficult and costly to achieve.	n/a

Funding Streams –	**ECO -** Investigating ECO funding opportunities to deliver EWI, IWI, new boilers, loft insulation and cavity wall insulation	2013-18	We continue to access ECO funding where individual households meet the criteria.	We continue to access ECO funding where individual households meet the criteria.	We continue to access ECO funding where individual households meet the criteria.
	Green Homes Grant -To support residents to access Green Homes Grant funded home improvements	2021 and ongoing	n/a	n/a	We have been using our Cosy City scheme to advertise the Green Homes vouchers to residents, and signpost them towards these where appropriate. We have been successful in securing £715,750 from the Green Homes Grant Local Authority Delivery Scheme to improve 80 homes across Norwich.
	Seeking new funding opportunities for energy reduction projects	Ongoing	We continue to seek out funding opportunities	We continue to seek out funding opportunities	We continue to seek out funding opportunities
Collective Switching	Working to promote Norwich Big Switch & Save. Leaflets and advice given	Ongoing	Over 3,000 residents have successfully switched to	Over 5,000 residents have successfully switched to date with	Over 6,000 residents have successfully switched to date with

	when carrying out stock surveys, visits etc. also assisting offline registrants by offering paper-based registration.		date with average savings of over £200.	average savings of over £200.	average savings of over £200.
Tackling Excess Cold	To identify privately owned homes where an excess cold hazard exists and to take appropriate action to remove the hazard. This may include the use of improvement notices in the case of privately rented accommodation and financial assistance for vulnerable owner-occupiers.	Affordable Warmth action plan (ongoing)	27 improvement notices served and 12 cases resolved informally. (N.B. No council stock homes have failed the HHSRS due to excess cold.)	No council stock homes have failed the HHSRS due to excess cold.	*Awaiting update.*
Private sector housing energy efficiency information	To commission private sector stock condition research to identify the extent and distribution of excess cold hazards, poor thermal efficiency and fuel poverty.	2013-14	Completed. Still using BRE 2014 Stock modelling data.	Completed. Still using BRE 2014 Stock modelling data.	Completed. We also have access to a city wide modelling tool provided by the Warm Homes Team which identifies areas of high fuel poverty.
Private sector housing renewals strategy	To introduce a new strategy, based on information provided by the stock condition research, which will address the problem of excess cold and poor thermal	2013-15	Our private sector financial assistance policy has been extended to offer help to private landlords.	Working with health colleagues across the community and acute services to promote the help the council can offer people	Working with health colleagues across the community and acute services to promote the help the council can offer people

	performance in owner-occupied and privately rented homes in the city.		Private rented sector Property registration scheme launched (May 2016). Minimum standards are required including energy efficiency. Continue to identify clients, through the council's Home Improvement Team, to help improve their properties. Participating in the corporate strategy team's Lakenham social project, prescribing pilot projects to help identify properties that can be improved. Working with health colleagues across the community and acute services to promote the help the council can	living in poorly heated homes. Continue to identify clients, through the council's Home Improvement Team, to help improve their properties and help them access appropriate funding streams. Our housing strategy includes a commitment to improving the energy efficiency of all homes in Norwich.	living in poorly heated homes. Continue to identify clients, through the council's Home Improvement Team, to help improve their properties and help them access appropriate funding streams.

			offer people living in poorly heated homes.		
Building relationships/ changing behaviours	Working to identify opportunities for 'habit discontinuity' where tenants and residents can be encouraged to change their habitual behaviour	2015-16	Ongoing	Ongoing	Ongoing
	Once 'habit discontinuity' opportunities are identified work to promote energy efficiency and sustainable lifestyle changes when people move home through the use of tenancy packs etc. Seeking new ways to effectively engage with the public re: energy reduction	2015-16	Tenant packs produced. Switch and save packs produced. One Planet Norwich work stream created and public engagement activities planned and delivered using events and social media.	One Planet Norwich work stream continued and public engagement activities planned and delivered using events and social media. A Plastic Free July campaign was held in 2018 through our One Planet Norwich campaign.	One Planet Norwich work stream continued and public engagement activities planned and delivered using events and social media.
Building relationships/ changing behaviours cont.	To raise awareness and encourage skills development in the local construction industry in the green deal and the installation energy savings measures through the council's Cosy City service and other activities	2015-17	To date 5 NVQ's fully funded with 'Building Futures' via the Cosy City Greener Communities project. The Green Deal is now finished and funding is not available, but we continue	n/a	n/a

			to look for future opportunities.		
	To implement initiatives to raise awareness and create action at a local neighbourhood level about energy efficiency, managing energy use and the benefits of installing renewable energy by providing information, advice and education Supporting the rollout of smart meters in the city	2015-17	The introduction of the One Planet Norwich brand has seen us engage with over 18,000 residents and visitors to Norwich at the first 2 One Planet Norwich festivals, on a range of sustainability issues. We are also promoting the rollout of the Smart Meters and are engaging with tenants at a range of community events in novel ways including 'Energy Efficiency Bingo'. Where budget allows we continue to seek new opportunities to engage with residents and tenants to increase	The One Planet Norwich festival has continued, engaging with over 15,000 visitors during the two subsequent festivals. Where budget allows we continue to seek new opportunities to engage with residents and tenants to increase awareness of energy use. We continue to engage with residents around smart meters and energy saving.	The One Planet Norwich festival has continued. Our 2019 festival engaged 6,000 residents. Unfortunately our 2020 festival was cancelled due to Covid 19 but we continue to raise awareness via social media. Where budget allows we continue to seek new opportunities to engage with residents and tenants to increase awareness of energy use. We continue to engage with residents around smart meters and energy saving.

			awareness of energy use.		
Research/ Projects	Investigating opportunities for heat from rivers via the DECC HNDU project	2015-17	We have researched this project and been successful in drawing down some funding allow for a scoping exercise to be carried out.	n/a	n/a
	Investigating the country's first Collective PV auction with switching partner iChoosr.	2015-16	Successfully delivered nearly 8,000 pv panels. opportunities	A second auction scheme was carried out in Summer 2018.	Further scheme with battery storage. Overall 2MW installed over the lifetime of the scheme.
Research/ projects cont.	Investigate the feasibility of running a White Label energy company	2017 onwards	n/a	We have awarded the White Label energy contract to ENGIE.	ENGIE have since left the domestic energy market and Roar Power is now a partnership with Octopus Energy supplying power to the East of England
	To explore with partner organisations the potential for a district heating scheme for the City and other options for the development of renewable energy for the future	2015-17	A feasibility study for district heating was completed but it was found not to be viable so this project has been paused.	n/a	n/a

	To explore the development and delivery of a large scale PV scheme on council housing across the City in consultation with tenants and review other opportunities for micro- generation	2015-17	A pilot study has been completed. However, with the large cut to the FIT it is not felt to be financially viable. However, we continue to seek further opportunities.	n/a	We will be using Green Homes Grant funding to install 30 solar pv systems on council housing. £550,000 for solar pv and thermodynamic works on our properties has been allocated for 2020/2021.
	To continue to lobby OFGEM for a standard for renewable energy tariffs so that this can be included within the council's switch and save scheme.	2015-17	We continue to lobby.	We continue to lobby.	Our collective switching scheme now has only renewable electricity tariffs
New Homes	To explore the potential use of Passivhaus or Sustainable Homes level 4 for all new build	2015-17	Planning policy requires all new dwellings to meet CSH4 water and energy. We encourage all developers and Housing Associations to explore energy efficiency options where viable.	We encourage all developers and Housing Associations to explore energy efficiency options where viable.	We encourage all developers and Housing Associations to explore energy efficiency options where viable.
	To develop new homes for the City Council that conform to Sustainable	2015-17	Ten dwellings at Hansard Close are all Passivhaus and due for completion	Goldsmith Street and Hansard Close construction completed	Goldsmith Street, the largest development of Passivhaus in the UK, was

	Homes Level 4 or Passivhaus		April 2017. 105 dwellings at Goldsmith Street are all Passivhaus and due for completion Summer 2018.		awarded the Stirling Prize for Architecture
Affordable Warmth	To continue to deliver an affordable warmth strategy and programme to reduce fuel poverty and increase wellbeing	Ongoing	Second Affordable Warmth Strategy published. Programme of fuel poverty reduction and warm and well work planned. 11th tranche of the Big Switch and save completed with more tranches planned for the future.	Third Affordable Warmth Strategy published. Programme of fuel poverty reduction and warm and well work planned. 13th tranche of the Big Switch and save completed with more tranches planned for the future.	Third Affordable Warmth Strategy published. Programme of fuel poverty reduction and warm and well work planned. 15th tranche of the Big Switch and save completed with more tranches planned for the future.
Affordable Warmth cont.	Organising warm and well workshops with stakeholder professionals to discuss best practice	Ongoing		Six workshops have now been held.	Seven workshops have now been held. Our 2020 conference was cancelled due to COVID-19 restrictions.

Section 10 - Future Actions:

10.1 We are proud of the progress the council has made so far in reducing both Norwich's carbon emissions and the level of fuel poverty in the city and we are committed to continuing this valuable work in the future. However, we recognise that we need to be realistic and understand that this work is operating in times of financial insecurity where future funding streams are not guaranteed. Whilst we continuously seek new opportunities we cannot be complacent that current funding streams will continue to be available to us. We therefore present our aspirations for the future, but are mindful that these may need to adapted, in order to reflect future available resources.

Future Action	Timescale
Continue to work with the digital inclusion project to enable residents to make use of lower energy tariffs and deals via online billing	Ongoing
Continue to utilise available ECO funding	Ongoing
Working with other local authorities to deliver collective energy switching across Norfolk	Ongoing
Run our White Label energy company	Ongoing
Working with vulnerable residents to assist them to get the best energy deals, even on pre-payment meters	Ongoing
Organising warm and well workshops with stakeholder professionals to discuss best practice (with respect to the ongoing coronavirus pandemic)	Ongoing
Seeking new ways to effectively engage with the public re: energy reduction	Ongoing
Seeking new funding opportunities for energy reduction projects	Ongoing
Work with Broadland District Council to identify households eligible for funding first time central heating installation	2018 – 2021
To support residents to access Green Homes Grant funded home improvements	February 2021 - March 2022

10.2 More widely, Norwich City Council is part of the Local Energy East Network. This energy strategy aims to increase energy efficiency and improve energy affordability in the region. The Greater Norwich Partnership of Broadland District Council, Norwich City Council and South Norfolk Council, representing 400,000 residents, plans to build over 30,000 new homes in the next 13 years and is implementing a network of electric vehicle charging points.

Appendix I - Submission to DBEIS

Please note the updated guidance has not yet been released. The below submission is based on 2019 guidance.

Name of Local Authority: Norwich City Council
Type of Local Authority: • City Council
Name and contact details of official submitting the report: Rachel Sowerby. rachelsowerby@norwich.gov.uk 01603 212112
Job title of official submitting the report: Affordable Warmth Officer
Names of teams working on policy areas covered by this reporting tool: One
Total number of staff working in above policy areas (by FTE) broken down by team if possible: Environmental Strategy: 2 ½ (until end March 2019, then 2 ½)

Headline and Overview Questions

1. Does your Local Authority have a current strategy on carbon reduction and/or energy efficiency for domestic or non-domestic properties? **YES**
2. If yes, please provide a link to your current strategy here:

https://www.norwich.gov.uk/download/downloads/id/1092/environmental_strategy.pdf (Environmental Strategy)

3. If no, are you planning to develop one? **N/A**
4. Energy saving/carbon reduction
    a. What scheme(s) has your local authority implemented in support of energy saving/carbon reduction in residential accommodation (such as owner-occupied, privately rented and social housing) or non-domestic properties since 2019? (200 words)

A.1.1 The council completed the Goldsmith Street development (105 properties), the largest development of Passivhaus in the UK, all of which is being let as social housing. Norwich City Council was awarded the Stirling Prize for Architecture: https://www.architecture.com/awards-and-competitions-landing-page/awards/riba-stirling-prize

A.1.2 From April 2019 to March 2020 a reduction of 2.5% in the council's carbon footprint was achieved. Carbon emissions have reduced 62.1% since 2007.

A.1.3 Our Solar Together scheme uses collective purchasing to reduce the price of solar pv for homeowners. Our latest iteration of the scheme included, for the first time, battery storage at a 1/3rd discount on market price.

A.1.4 We continue to work with Broadland District Council and the Warm Homes Fund to install first time central heating in fuel poor homes across Norwich. We have focused on the Templemere estate in Norwich, an area of deprivation with the majority of homes being heated by fuel inefficient electric storage heaters.

A.1.5 75 homes have had grants approved, with, as of January 2021, 42 installed. The Warm Homes Team expects all installations to be completed by May 2021. Overall £322,535.34 has been invested into this estate, plus £800,000 in installing new mains gas lines throughout the estate.

b. What scheme(s) is your local authority planning to implement in support of energy saving/carbon reduction in residential accommodation (such as owner-occupied, privately rented and social housing) or non-domestic properties in the next two years? (200 words)

A.2.1 The council has been successful in securing, for £715,750 from the Green Homes Grant Local Authority Delivery Scheme to improve 80 homes across Norwich (mixed tenure). This includes £650,000 for capital works, £48,750 to administrative costs and the rest to ancillary measures.

A.2.2 £550,000 for solar pv and thermodynamic works on our properties has been allocated for 2020/2021.

A.2.3 The council will continue to work as part of the Warm Homes Team until August 2021 when the funding comes to an end. In particular we will be completing works on the Templemere estate.

A.2.4 The council has received grant funding from a decarbonisation fund to further develop energy savings projects at City Hall and other assets. These include the use of renewables.

A.2.5 In addition, plans are in place for the following:

- Installing EV chargers for fleet use
- New energy efficient servers
- New smart LED connected lighting at St Giles MSCP
- Further LED retrofitting at the halls
- Further LED retrofitting in landlord lighting/ parks
- Continued development of renewables and battery storage.

5. What has been, or will be, the cost(s) of running and administering the scheme(s), such as the value of grants and other support made available, plus any other costs incurred (such as administration) as desired? Please provide figures and a brief narrative account if desired. (100 words)

A.3.1 Works delivered by the Green Homes Grant will be covered by the BEIS grant and HRA fund. This Green Homes Grant bid includes funding to cover staff time.

A.3.2 £715,750 from the Green Homes Grant Local Authority Delivery Scheme will be used to improve 80 homes across Norwich (mixed tenure). This includes £650,000 for capital works, £48,750 to administrative costs and the rest to ancillary measures.

A.3.3 Work at the Templemere estate is being funded by the Warm Homes Scheme.

A.3.4 All staff time to implement, run and administer schemes will be covered from existing budgets.

6. What businesses, charities, third sector organisations or other stakeholders do you work with to deliver the scheme(s)? (100 words)

A.4.1 Norwich City Council work with Aran Services to deliver insulation improvements to private sector homes and NPS Norwich manage our properties.

A.4.2 The council works with iChoosr, a company specialising in collective purchasing/switching, to deliver our Solar Together and Big Switch and Save schemes. We have also worked with other Norfolk councils on this scheme in order to advertise the offer across Norfolk.

A.4.3 We work with Broadland District Council, Affordable Warmth Solutions and Cadent to deliver first time central heating to fuel poor residents in Norwich via the Warm Homes Fund.

7. What has been the outcome of the scheme(s) (e.g. energy savings, carbon savings, economic impacts such as job creation and/or increased business competitiveness, societal impacts such as alleviation of fuel poverty and/or improved health outcomes etc.)? This does not have to be measured against national data or benchmarks, but rather focuses on the local authority's own monitoring and evaluation. (200 words)

A.5.1 Fuel poverty has reduced in Norwich since the previous HECA. Currently 11.1% of households in Norwich are fuel poor.

A.5.2 Through our solar schemes we have installed over 2MW of solar power in Norwich, £2.1 million in Norfolk and avoided 1,800 tonnes of CO_2.

A.5.3 Carbon emissions from the council's estate have reduced 62.1% since 2007.

A.5.4 The average SAP rating for our council owned homes is 70.94. This equates to a solid C rating and compares favourably with the private sector SAP rating of 63. These higher levels of energy efficiency will be helpful in staving off fuel poverty amongst some of the most vulnerable of the city's residents, particularly those on a low income.

A.5.5 Where there are low council stock levels the resulting fuel poverty is quite stark, despite higher income levels. We believe that the data supports the council's decision to retain our housing stock at a time when many other local authorities chose not to.

A.5.6 The Big Switch and Save has saved residents over £770,000 over the lifetime of the scheme and avoided 410 tonnes of carbon by switching to renewable energy tariffs.

8. What lessons have you learnt from delivering this scheme(s)? (100 words)

A.6.1 In order to make the biggest difference close monitoring of your energy data is vital.

A.6.2 Technology is always changing and we have needed to revisit energy saving projects from as recently as 5 years ago in the light of new technology. Our car park lighting is a case in point where we are looking to install smart LED lighting which will dim up and down according to need.

A.6.3 It's not always possible to be as proactive as we might like when reactive work, such as a boiler breakdown in sheltered housing takes priority over planned, proactive work, such as insulation.

Local Communications Strategy

9. Does your local authority provide and advisory service to consumers (and businesses) on how to save energy? **YES**
10. If yes to question 10, please briefly outline how this is undertaken (100 words)

A.7.1 Through a number of methods including, energy saving packs, social media and via our ECO campaign Cosy City www.cosycity.co.uk

A.7.2 We have sent out energy saving packs and information on ECO grant funding to targeted areas of the city with high levels of fuel poverty.

A.7.3 Our Affordable Warmth Officer advises residents on how to save energy within the home and maximise their income through benefit advice, help with fuel debts and

supporting residents in supplier disputes and works with teams within the council, including specialist support and private sector housing, to provide 1:1 support where appropriate.

11. How do you communicate or encourage energy saving amongst domestic consumers and/or local businesses? (100 words)

A.8.1 Our social media page, One Planet Norwich promotes small changes consumers can make to their lifestyle to decrease their carbon footprint. Since August 2020 our posts have reached just over 25,000 unique users.

A.8.2 We normally hold a One Planet Norwich festival event, which celebrates eco-living and normally sees our messaging reaching 10,000+ people. Unfortunately we had to cancel our 2020 event due to the ongoing coronavirus pandemic. Our 2019 event was a one-day festival with approximately 6,000 visitors.

Local Green Supply Chain

12. Does your Local Authority promote the use of energy efficient products amongst consumers (and businesses)? (if you answer no please move onto the next section 'Private Rented Sector') **YES**
13. If yes to question 12, please briefly detail how this promotion work is undertaken (100 words).

A.9.1 One Planet Norwich works to actively engage with Norwich residents about small changes they can make to their lifestyle to reduce their carbon emissions, including through raising awareness of energy use and the savings that can be made through fitting energy efficient measures.

14. What engagement (formal or informal) does your local authority have with local businesses/supply chains involved in promoting energy efficiency products or carbon reduction? (100 words).

A.10.1 We work with local company Aran Services (based in Bury St Edmunds) to deliver ECO funded installation projects.

Financial Support for Energy Efficiency

15. What financial programmes, if any, do you have to promote domestic and non-domestic energy efficiency or energy saving? If applicable, please outline the sums, where such funding is sourced, and where it is targeted. (If you do not have any financial assistance programmes, please enter 'N/A' and move onto the next section 'Fuel Poverty') (200 words) **N/A**

Fuel Poverty

16. Does your local authority have a fuel poverty strategy? **YES** If yes, please describe the scope of the strategy, and the support that is available for low income and vulnerable households to help tackle fuel poverty in your local area. Please also provide a link to your strategy if published. (300 words)

https://www.norwich.gov.uk/downloads/file/2241/affordable_warmth_strategy_2018-2021

A.11.1 This encompasses partnership working both within Norwich City Council and external partners. We support low income and vulnerable households using a variety of tools, coordinated by our Affordable Warmth Officer.

A.11.2 Norwich City Council supports households in fuel poverty through a range of initiatives including: supporting residents to utilise ECO funding, our collective switching scheme, our Warm and Well work both with stakeholders and the public, Home Improvement team work, work with Private Sector landlords around category 1 hazards and ongoing improvements to our housing stock.

A.11.3 We provide energy advice and support, emergency payments for vulnerable residents using charity money awarded to us, emergency heating in the form of radiator loans to residents without central heating, help residents access appropriate funding for heating repairs (if available), work with residents to reduce fuel debts and provide small scale measures such as insulation and 'Winter Well' packs which include thermal clothing, blankets and soup.

A.11.4 We were the second local authority in the UK to introduce a collective switching scheme and have since promoted 13 tranches. The scheme aims to secure lower energy tariffs for switchers through the power of collective switching. To date we have supported over 5,000 switches to cheaper energy tariffs, with average savings of over £200 per household per year. Our scheme is open to all residents in the city, including those without access to the internet, who may be unsure of how to find the best deal, and those on prepayment meters, who may be struggling with high energy bills.

A.11.5 We work in partnership with the health sector and third sector, to engage with the most isolated or vulnerable residents of Norwich. We have engaged a range of health professionals and voluntary organisations to promote our affordable warmth work.

17. What steps have you taken to identify residents/properties in fuel poverty? (enter 'N/A' if not appropriate) (200 words)

A.12.1 We have a previous BRE stock survey from 2014 and a regularly updated database of our own properties which shows the type of heating and insulation properties have. Combined with CACI paycheck data the council can identify areas of fuel poverty and target those for interventions.

A.12.2 The council has mapped areas of low income (using benefit claimants a proxy) and age to target areas at risk of excess winter deaths.

A.12.3 In 2019, The Warm Homes Team at Broadland District Council commissioned the Energy Saving Trust to produce a stock model for housing in Norfolk.

A.12.4 Using EPC data, and models to predict those without EPC's, this has produced a stock survey of all housing in Norwich. This includes the likelihood of fuel poverty and we have used it to target interventions and information campaigns to the most at risk areas of the city. We have also used it to inform bids and energy efficiency works.

18. How does fuel poverty interlink with your local authority's overall carbon reduction strategy? (enter 'N/A' if not appropriate) (200 words).

A.13.1 Our fuel poverty strategy is part of our wider environmental strategy which includes carbon reduction.

A.13.2 By helping residents improve their home energy efficiency and insulation we are also targeting carbon reduction.

19. Fuel cost reduction
    a. What measures or initiatives have you taken to promote fuel cost reduction for those in fuel poverty? (enter 'N/A' if not appropriate) (200 words)

A.14.1 Norwich City Council runs a collective switching scheme 'The Big Switch and Save' which consistently delivers savings of over £200 for residents. This scheme is open to all residents and our switching team is able to register offline residents who are otherwise unable to access many tariffs. This scheme encourages residents to move away from high cost standard tariffs to more affordable fixed price tariffs. This scheme employs what is known as a 'reverse auction' where different suppliers bid to be able to access their registrants, driving the prices down. As part of our targeted support we provide information to fuel poor residents about this scheme and encourage them to switch provider to make sure they are not left on expensive standard tariffs. To date we have supported over 5,000 switches to cheaper energy tariffs.

A.14.2 This scheme now only allows suppliers offering 100% renewable electricity as standard to enter the auction process.

A.14.3 We have recently been awarded £10k from Norfolk County Council to support clinically extremely vulnerable residents in fuel poverty.

b. If you have taken measures or initiatives to promote fuel cost reduction for those in fuel poverty, what partnership with business or energy providers have you undertake? (enter 'N/A' if not appropriate) (200 words)

A.15.1 The Big Switch and Save is a partnership between Norwich City Council and iChoosr, a business specialising in reverse auctions and collective switching.

The Energy Company Obligation

20. Has your local authority published a Statement of Intent (SoI) for ECO flexibility eligibility? **YES** If yes, please include a link to your SoI below

https://www.norwich.gov.uk/downloads/file/3974/eco_flexible_eligibility_-_statement_of_intent

21. Please use the following space to provide any further information you feel might be of benefit to BEIS, in helping us to understand ECO Flex delivery in more detail. For example, the number of declarations signed versus the number of households helped. (200 words)

A.16.1 Norwich focuses on loft and cavity wall insulation. Loft insulation has historically been a more popular measure in Norwich than cavity wall insulation as not all properties in Norwich have cavity walls. Cavity wall insulation also requires specialist equipment to install. However, take up of loft insulation can be impeded due to residents storing belongings in their loft space.

A.16.2 Rental properties can restrict the take-up of home improvements measures since the landlord may be reluctant to pay to improve the thermal efficiency of the property when they will not benefit directly from a decrease in fuel bills.

Smart Metering

22. Please provide a brief statement outlining your current or planned approach to: Engage and support your residents (including those in vulnerable circumstances or with pre-payment metering) to promote take up of smart meters and achieve associated benefits (e.g. ability to control energy use, identify best value tariffs)? Please detail any work undertaken or planned with local/community groups, housing associations, micro businesses, Smart Energy GB under their Partnership Programme and energy suppliers. (150 words)

A.17.1 Norwich City Council has previously used funding from Smart Energy GB to promote smart meters in the city through community events and workshops. We specifically targeted vulnerable residents and offered residents confused by their smart meters additional in-home support from our trained smart meter champions. While we do not actively promote smart meters as part of our fuel poverty work we do provide advice and information when requested.

23. Please provide a brief statement outlining your current or planned approach to: Integrate your approaches to delivering energy efficiency improvements in residential accommodation with the opportunities presented by the installation of smart meters, drawing upon materials from the Smart Meter Energy Efficiency Materials (150 words).

A.18.1 If further funding becomes available we will use this to promote smart meters across Norwich.

24. Please detail any resources/support (e.g. services, funding) available to residents who have had an appliance condemned for safety reasons and cannot afford to replace it (e.g. during visual safety checks conducted during their smart meter installation or otherwise). (150 words)

A.19.1 We offer loans of oil filled radiators to residents without central heating. We have a variety of funding streams available for residents, including grants to prevent admissions to hospital due to cold homes, and home improvement loans, however these are subject to availability and eligibility.

25. Please detail any existing relationships with energy suppliers to help ensure that the opportunities presented by vacant properties under your control are effectively utilised (i.e. gaining access to install a smart meter) (150 words)

A.20.1 Norwich City Council currently has a contract with British Gas to supply our void properties. This does not currently include an agreement to install smart meters.

Future Schemes or Wider Initiatives

26. Please outline any future schemes or wider initiatives not covered above that your local authority has carried out or is planning to undertake to improve the energy efficiency of residential accommodation or businesses in your area, for example, within your Local Enterprise Partnership (LEP) Energy Strategy (if you do not plan any future schemes currently, please enter ‘N/A’). (500 words)

A.21.1 Norwich City Council is part of the Local Energy East Network. This energy strategy aims to increase energy efficiency and improve energy affordability in the

region. The Greater Norwich Partnership of Broadland District Council, Norwich City Council and South Norfolk Council, representing 400,000 residents, plans to build over 30,000 new homes in the next 13 years and is implementing a network of electric vehicle charging points.

A.21.2 We also have a number of internal actions we will be focusing on. We will continue to work with the digital inclusion project to enable residents to make use of lower energy tariffs and deals via online billing, continue to utilise available ECO funding, work with other local authorities to deliver collective energy switching across Norfolk, run our White Label energy company, work with vulnerable residents to assist them to get the best energy deals, even on pre-payment meters, organising warm and well workshops with stakeholder professionals to discuss best practice, seek new ways to effectively engage with the public re: energy education, seek new funding opportunities for energy reduction projects and work with Broadland District Council to identify households eligible for funding first time central heating installation.