Angus Local Housing Strategy 2023-28

Topic Paper: Fuel Poverty, Energy Efficiency & Climate Change

The purpose of this paper is to determine the extent to which fuel poverty, energy efficiency and climate change impacts on housing in Angus and explore the relationship between these dynamics. It will also set out how close we are to achieving national priorities and targets, outlining the progress we have made, but additionally identifying areas of underperformance and the evident challenges the partnership faces to achieve more positive outcomes for households and the housing sector in Angus.

1. National Priorities and Targets

The Scottish Government set out a number of priorities to ensure the homes that people live in are warm, dry, energy efficient, low carbon and affordable to heat. A number of priorities and targets were identified to help achieve sustainable homes.

Climate Change Bill (2019) - to set a net-zero greenhouse gas emissions target for 2045.
The Climate Change Bill also includes the following targets:

1. 90% reduction in greenhouse gas emissions by 2040 (measured against 1990 levels);
2. 70% reduction in greenhouse gas emissions by 2030 (measured against 1990 levels).

Section 44 of the 2009 Act requires public bodies in exercising its functions, to act in a way that is most sustainable and:

- Best calculated to contribute to the delivery of the Act's emission reduction targets;
- Best calculated to deliver statutory adaptation programs.
- Section 72 of the 2009 Act places additional requirement on the content of local development plans, whereby it must include policies requiring all developments to be designed so as to ensure that all new buildings avoid a specific and rising proportion of the projected Greenhouse Gas (GHG) emissions from their use, through the installation of low and zero-carbon generating technologies.
- The Flood Risk Management (Scotland) Act 2009 requires local authorities to exercise their flood risk related functions with a view to reducing overall flood risk, meaning that local flood risk plans must be taken into account when preparing local development plans and that the location of future development must help to reduce the potential impacts of flooding.

The Climate Change Bill firmly binds with the Paris Agreement (2016) which was adopted under the UN Framework Convention on Climate Change. Scotland is fully committed to reducing emissions to help limit the global temperature rise to 1.5 °C and achieve a climate neutral world by mid-century. Central to the emissions reduction is that scale and pace of changes to how we heat our buildings, with buildings accounting for around 20% of Scotland greenhouse gas emissions.

The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 introduced a new statutory target for reducing fuel poverty that:

- by 2040, as far as reasonably possible, no household, in any Local Authority area, in Scotland is in fuel poverty;
- and, in any event, no more than 5% of households, in any Local Authority area, in Scotland are in fuel poverty;

- no more than 1% of households in Scotland are in extreme fuel poverty;
- and the median fuel poverty gap of households in fuel poverty in Scotland is no more than £250 in 2015 prices before adding inflation.

Following the Fuel Poverty Act, the Fuel Poverty Strategy (Tackling Fuel Poverty in Scotland: a strategic approach) was launched in 2021. Rooted in the principle of social justice, the strategy aims to tackle the main drivers of fuel poverty to ensure that everyone can afford the energy they need to live in warmth and comfort, they are:

- poor energy efficiency of the home
- low household income
- high energy prices
- how energy is used in the home

A number of actions have been identified to tackle the drivers and address fuel poverty for those at the highest risk. It is recognised that tackling the issues will require longer-term planning, particularly as we also respond to the climate emergency, and therefore the LHS will be central to the Angus response and delivery mechanisms at local level.

Housing to 2040

Housing to 2040 sets out the collective vision for homes and communities, affirming the commitment to achieve climate change targets and ensure new and existing homes are fit for the future with zero emission heating systems. Included in the vision will be:

- Zero emissions heating for new buildings consented from 2024.
- Aim for all new homes delivered by social landlords to be zero emission homes by 2026.
- Adapt existing homes to improve energy efficiency and decarbonise heating.
- Continued investment in energy efficiency support, extending support for fuel poor, rural and off-grid communities.
- Significant investment in decarbonised heat from 2025 onward
- New regulations to set standards for zero emission heating and energy efficiency (due 2023-25).
- Regulation in the private sector (both rented and owner-occupied) for minimum EPC standards.

Alongside these principles there will also be a review of the energy standards (from 2021), with a wholesale review of the EPC (Energy Performance Certificate) assessment process. There will also be supplementary strategies produced:

- Zero Emissions New Build Affordable Homes Strategy (2021) which will support the new zero emissions targets and focus on the housing contribution to the green economy, construction models and heating systems.
- Heat in Buildings Strategy – published in draft format in early 2021, the strategy sets out the actions and proposals for transforming our buildings and the systems that supply heat. The focus will be on the investment and regulatory framework, and how best to engage with communities and industry along the pathway to 2045.

A key driver to implementing these proposals and changes will be to raise the profile of energy efficiency and zero emissions heating options, ensuring that Scotland's people have an opportunity to shape the heat transition, whilst at the same time gauge consumer knowledge of the climate issues and what changes they will have to make.

2. Fuel poverty

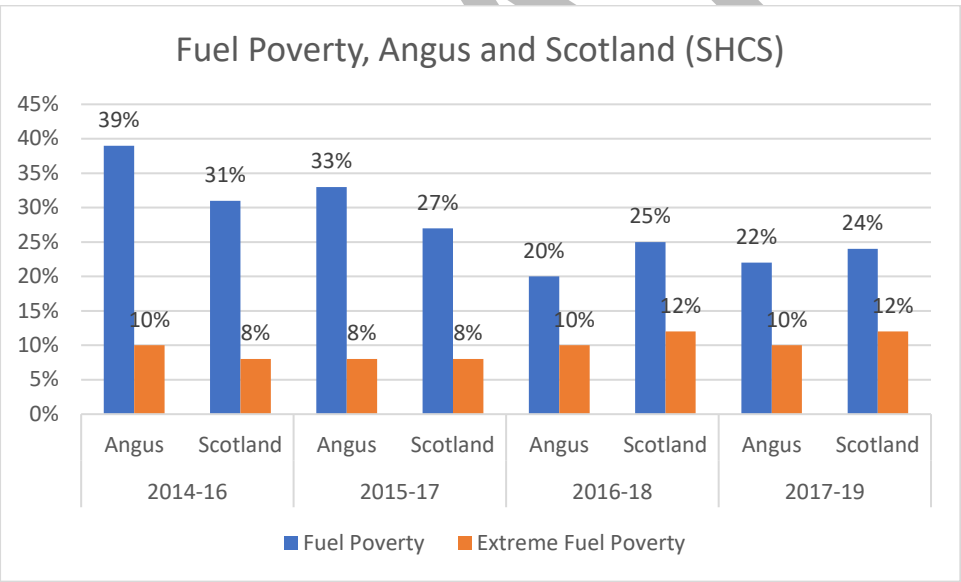
Alongside the national statutory targets to reduce fuel poverty, the Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 also established a new two-part definition whereby a household is considered fuel poor if:

- after housing costs have been deducted, more than 10% (20% for extreme fuel poverty) of their net income is required to pay for their reasonable fuel needs; and
- after further adjustments are made to deduct childcare costs and any benefits received for a disability or care need, their remaining income is insufficient to maintain an acceptable standard of living, defined as being at least 90% of the UK Minimum Income Standard (MIS).

Rates of fuel poverty were already unacceptably high, but recent events have led to a perfect storm of financial blows which impact a majority of Angus households. To offer some perspective, the remainder of this section illustrates fuel poverty in Angus both prior to and after the pandemic and cost-of-living crises.

2.1 Pre-pandemic and Cost of Living Crisis

In 2019, the new fuel poverty definition predictably affected the statistics, both nationally and at a local level with a reduction in the number of households in fuel poverty.



The new methodology was applied to the Scottish House Condition Survey (SHCS) data from the 2016-18 publication. In Angus Fuel Poverty reduced from 33% to 20%, whilst nationally there was a marginal reduction from 27% to 25%. The latest publication (2017-19) shows a marginal increase in Angus (22%) and decrease across Scotland (24%).

More recent versions of the SHCS were delayed due to the pandemic but given the general rise in the cost of living and the fuel price rises through 2022/23 it would be prudent to assume that fuel poverty rates are much higher, as will be the fuel poverty gap.

Fuel poor Angus households would require on average £720 per year (£60 per month) to move the household out of fuel poverty - a significant amount for households that may also have low to median incomes.

It is worth noting that the fuel poverty gap (adjusted) tends to be much higher for the rural areas of Scotland. From these figures it is clear that income maximisation and reducing fuel costs will be key to achieving the target of a maximum £250 fuel poverty gap by 2040.

Source: SHCS 2017-19

The fuel poverty gap (for fuel poor households adjusted to 2015 fuel prices) is the annual value fuel poor households would require to move the household out of fuel poverty.

Area	Angus	Aberdeenshire	Dundee	Fife	Perth & Kinross	Scotland
Fuel Poverty Gap	£720	£1,160	£600	£610	£1,000	£650

1.1.1 The local picture

At a local level, this equates to around 11,800 households (22%) in fuel poverty and 5,400 in extreme fuel poverty (10%). With a population of around 116,000 this also translates that at least 1 in 10 Angus residents lives in fuel poverty and we should expect that number to be far higher given that there will be more than one occupant in many of these households.

The new definition has seen a reduction in levels of fuel poverty across the whole country, but the reduction has been far greater at a local level and this is mainly attributed to the types of housing stock and households. The reductions have been attributed to the following:

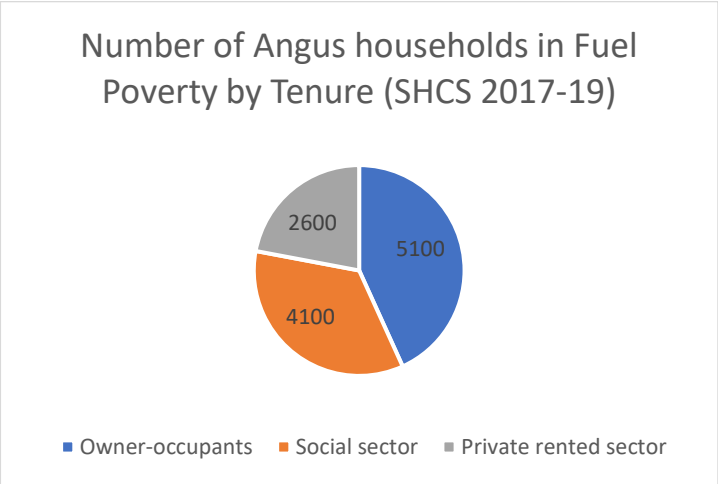
- Fewer households in rural areas now regarded as being in fuel poverty
- Greater number of flat occupants than house occupants in fuel poverty
- Proportionately fewer owner-occupiers, and more private and social renters
- Proportionately fewer older household types, with now a more even distribution toward family and adult only households

In comparison to Scotland, the Angus housing stock has a greater proportion that are rural, and our urban areas are made up from fewer flatted dwellings that are more common in the cities and surrounding settlements.

1.1.2 Tenure, House and Household Types

We know that the proportion of owner-occupants in fuel poverty has reduced, however it remains the tenure with the highest number (5,100) of fuel poverty households. We can also see high proportions of those in the rented sectors (over 1/3 in each tenure), particularly within the social sector. Social rents remain competitively low across Angus, and a program of energy efficiency stock improvement measures (EESSH) has resulted in vastly improved stock but this alone will not reduce poverty with many households still struggling with fuel bills. From this we can deduce that:

- many local households do not have the necessary disposable incomes
- fuel costs remain high and tend to increase at greater pace than inflation



Tenure	%age of stock
Owner occupied	15%
Social Sector	35%
Private Rented	36%

In terms of assistance sought by local households, data from Save Cash and Reduce Fuel (SCARF) shows that over a two-year period 2018/19 to 2019/20 there were 790 referrals from households struggling with their energy costs. The data shows that around 66% of all referrals were from owner-occupants:

Owner-occupant referrals	Total Referrals	Total number of people in all households	Total number of children in all households
524	790	1345	411

The data also shows that around 60% (467) of referrals came from households who reside in detached or semi-detached properties, which are more common within private sector home ownership. There was also a high number of children (u/16) resident in the households, which outlines a wider cause for concern that our future generations are enduring poverty and may be living in sub-standard housing conditions.

This issue is highlighted further by findings from the SHCS (2017-19) which outlined the estimated volume of household types in fuel poverty:

Older	Families	Other (single adult, 2 adult etc)
23%	13%	26%

- Over 1 in 5 older people households live in fuel poverty (equating to 6,400 of our 28,000 over 65s)
- Over 1 in 10 families live in fuel poverty, meaning at least 1 in every 10 children experiences poverty (equating to 1,900 of our 19,000 children)
- Around 1 in 4 adult only households live in fuel poverty

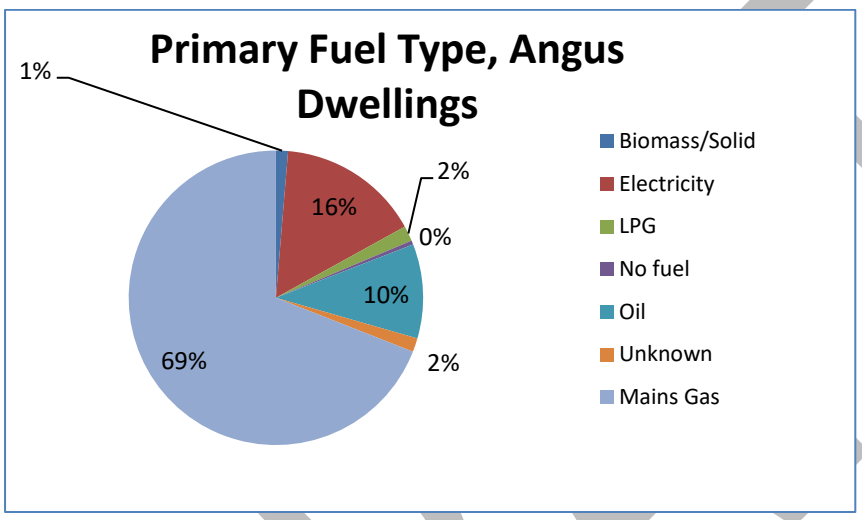
The data is clear. Fuel poverty continues to impact on those most vulnerable, our low to modest income households which come in varying types. Our elderly households, our households with children, and other households such as single adult. It is therefore vital that we take steps to help households maximise their incomes, improve the energy efficiency of their home and manage their fuel usage to help reduce costs.

1.1.3 Location, Fuel Types and Costs

One of the drivers of fuel poverty is the types of fuel used by householders. In many instances access to mains gas supply is a barrier, particularly for rural households. The SHCS (2017-19) outlines that a large number of Angus households are off grid.

%age of dwellings off gas grid	As number of dwellings
19%	10,450

The alternative heating systems tend to be more expensive, with biomass/solid fuel, oil, liquid petroleum gas (LPG) and electricity the more common fuel systems. Data from the Home Analytics outlines the estimated fuel types in use across Angus, with over two-thirds of households reliant on mains gas which are concentrated in and around the main towns and settlements.



Fuel Type	Number of households
Gas	37,950
Electricity	8,800
Oil	5,500
LPG	1,100
Biomass/ Solid	550

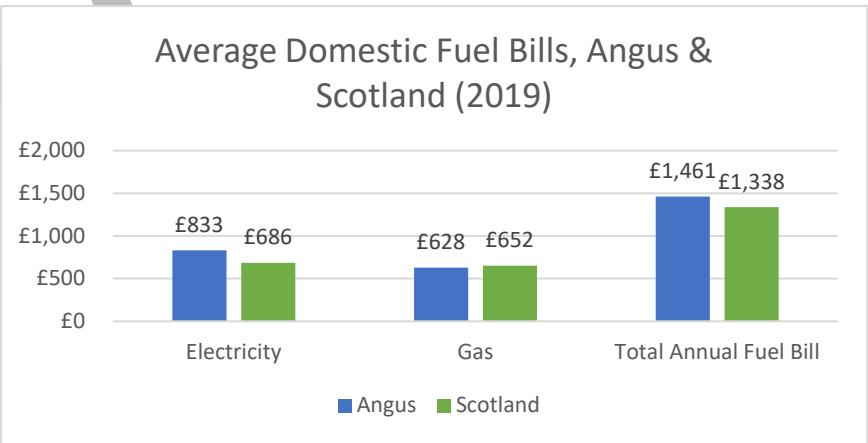
Source: Home Analytics, Scotland, V3.7 Report – Angus

Our landscape and infrastructure are both pivotal in how Angus residents heat their homes. With many rural areas in exposed areas high above sea level, coupled with costal towns and settlements which bear the brunt of harsh north sea weather fronts, maintaining a comfortable living environment can be costly.

Average Domestic Energy Demand (Per annum)

Angus
25,645 kW/Year
Scotland
23,005 kW/year

Source: Scottish Energy Statistics Hub (gov.scot)



The data below shows that in 2019 the average Angus household paid around 10% more (£123) per annum than the national average and uses around 11% more energy.

We must also note that there are significant differences in fuel prices between North and South Scotland, where North Scotland residents (inc Angus) are paying on average 6% a year more than South Scotland residents. Differences between Gas bills in North and South Scotland are negligible.

This position has been exacerbated by the continual increase in domestic fuel prices[1], which over the period 2010 to 2020 increased by a staggering 36.7%. Over the same period the Uk Consumer Price Index (CPI) increased around 20%, averaging a 2% increase each year. In contrast to the substantial price increase for goods and services, the average weekly household income in Scotland increased by around 9% from 2010 to 2019, and the gains were much more limited in lower income households.

Home Analytic data estimates that these average fuel bills increase for rural and older housing stock, with rural properties consuming up to 33% more energy. The fabric of these rural properties tends to be solid wall (around 41%) or timber frame (31%) and it is estimated that around 50% of them have no wall insulation, meaning a lower EPC rating and they will be difficult to treat or improve going forward.

Data from the Home Analytics highlights that our rural properties tend to have lower EPC ratings. This has a knock-on effect of the residents who are unable to access conventional fuel types, face significant costs to improve the energy efficiency of their home, and endure above average fuel bills due to their habitat. Around 1 in 10 Angus households use Oil as their fuel source, which is not only costly but also has higher carbon emissions than gas.

EPC Band	A-B	C	D	E >
% of properties	7%	33%	37%	23%
% of rural properties	12%	19%	26%	43%

Source: Home Analytics, Scotland, V3.7 Report – Angus

The Scottish Index of Multiple Deprivation (SIMD) 2020 outlined that Angus was home to 6 of the Top 15% Most Deprived Datazones in Scotland, an increase of 4 areas since 2016 (there are 155 datazones in Angus). This is an area-based measure of deprivation and not everyone in a deprived area will themselves experience high levels of deprivation. However it does highlight that deprivation and hardship have increased in Angus and the extent of fuel price increases will have only exacerbated the situation.

In terms of income, SIMD highlighted other notable facts:

- 67 datazones with 10% or more of the population are income deprived
- 21 datazones with 20% or more of the population are income deprived
- 2 datazones with 30% or more of the population are income deprived

The 67 datazones include both urban and rural areas and are home to some 33,300 Angus residents. The rural datazones tend to be larger land areas and therefore it is difficult to identify smaller pockets of deprivation. However it does highlight that deprivation and hardship have increased in Angus and the extent of fuel price increases will have only exacerbated the situation across the authority area. Where fuel price increases occur to unaffordable levels, householders tend to accrue fuel debt or

[1] Source: Uk Fuel Price Indices https://www.gov.uk/government/statistical-data-sets/monthly-domestic-energy-price-stastics

become reluctant to use their heating systems to heat their homes to adequate levels for safe, warm and comfortable living. Both scenarios lead to the widening of social and health inequalities, and whilst this is a concern for everyone it can be particularly harmful for our children for whom we aim to provide the best start in life.

Recent DWP data shows that there were 2,866 (2020/21) children in Angus living in Absolute Poverty, representing just under 15% of all Angus children. The problem exists in all HMAs in Angus but it is more prominent in the East HMA. Further cross-analysis of SIMD (2016) data and the Child Population statistics reveals that there were 3,139 Angus children living in areas regarded as being in the top 30% overall SIMD ranking, areas with higher than average poverty. Looking further at the data, the lowest ranking areas are to be found in Arbroath, Brechin and Forfar. Given the current cost of living crisis, these numbers may well have increased, particularly within the areas where poverty levels were already a concern.

Whilst we welcome a new fuel poverty definition and the initial positive reduction in fuel poverty, rates marginally increased in Angus through 2019 and it is clear that improvements must be made to our housing stock and fuel type choices and supply. Our location and unique weather patterns will always mean that Angus residents pay more that average for their fuel usage, therefore it is crucial that we attempt to maximise household incomes and improve the energy efficiency rating of properties across all tenures. We do however face a financial crisis that will undoubtedly limit what we can do but we now know that the problem is far wider and will affect many more households for what is expected to be at least another few years.

1.2 The Current Outlook

We are all however currently experiencing significant economic pressures. The current energy price cap (£2,500 for a typical household) remains in place until 31 March 2023 and, as things stand, will be followed by a new price cap of £3,000 until 31 March 2024. These are welcome buffers against true fuel costs but they remain significantly higher than the typical cost for energy in winter 2021 which was £1,277 (December 2021).

Cap	April 2022	October 2022	April 2023
Price Cap	£1,971	£2,500	£3,000
No Price Cap	£2,500	£3,549	>£4-5,000

We can see that for the typical household, energy costs have doubled in the space of a year and are anticipated to increase again in early summer 2023, meaning the average household will pay around £1,800 more per year for energy. Overall, this means that the average energy bill has risen from around £106 pcm (winter 2021) to an eye-watering £208 to £250 pcm as we navigate through 2023.

The Price Cap

Although Government intervention is welcome, these 'price-caps' do not mean that households won't pay more than these levels, instead they are based on typical consumption across the Uk where house types and sizes vary, not to mention weather patterns.

Unfortunately, housing stocks where there are less, smaller flatted dwellings will likely incur costs greater than these caps and in Angus, where due to a harsher climate we use around 11% more energy than the rest of Scotland, there will be further costs to bear.

A crude assessment of these new pricing figures would immediately suggest that the fuel poverty rate in Angus is realistically somewhere nearer 40-50%. Scottish Government income estimates (2018 based) outlined the median Angus income to be £29,465 (2020, Angus HNDA Report). However when

we look further into the income profiles we can see that around 49% of Angus households earn under £30,000 per year, and around 41% earn under £25,000 per year.

By applying the fuel poverty definition that 'after housing costs…more than 10% of their net income is used…' we can see that a vast majority of median-to-low-income households will be spending more than 10% of their net income (based on an average spend of £2,500 per year) on fuel costs. With almost 55,000 households, we should assume that around 27,000 are in fuel poverty and the true fuel price gap is actually nearer £2,000 rather than the 2019 estimate of £720 per annum.

Issues for further consideration

- We need to maximise incomes, but also ensure that homes are as energy efficient as possible to reduce fuel usage, save money, avoid / reduce fuel poverty.
- Encourage better home management – energy use – increase consumer knowledge; remove ingrained attitudes.
- Increase awareness of the impending changes – both for technology choices/limits; and cost planning.
- Stock review (those in or on the cusp of fuel poverty) – what are the options (tech/systems/new measures etc) and how will the costs be covered?(options for grants/loans etc)
- Target (vulnerable) households most in need to reduce the inequality gap.

The situation is further exacerbated by the general cost-of-living crises where there has been a rapid rising cost of many goods and services. The Joseph Rowntree Foundation outlined a revised Minimum Income Standard (MIS) for 2022, recommending that a single person now needs to earn £25,500 to reach an acceptable standard of living, whilst family households need to earn £43,400. These are of course Uk-wide standards but they do represent a fair reflection of local circumstances where households will tend to have higher energy consumption (+11% in comparison to the rest of Scotland) due to our colder weather patterns.

3. Assistance for Angus households

Home Energy Scotland (HES) is the Scottish Government program that is controlled by the UK wide Energy Savings Trust (EST), and at a local level Save Cash and Reduce Fuel (SCARF) deliver the contract offering a wide range of energy efficiency and fuel poverty services, from practical in-home support to referrals for funding. A number of schemes are available in Angus for those who seek to improve the energy efficiency rating of their home, with the schemes offering either full or part funding toward the measures.

1.3 Energy Efficiency Advice and Services

SCARF have been working in partnership with the Council for a number of years, using their skills and industry relationships to access key funding streams for households in the area, as well as acting as a local advice centre for households offering them the support they need to develop better living conditions. Over the past five years there have been over 20,900 engagements with Angus households. In 2021/22 there was a 51% increase in engagements from 2017/18, likely in response to the increase in fuel prices (from around £1,277 to £1,971), and these reporting figures do not yet take account of the period when prices dramatically increased (from April 2022).

Where eligible, households will be referred to scope the potential for funding toward energy efficiency measures in their home, however there are a number of other avenues such as switching energy provider (now obsolete) and referrals for financial health-checks to maximise household income.

Year	SCARF Engagements
2017/18	3564
2018/19	4766
2019/20	3282
2020/21	3896
2021/22	5396

Year	Energy Supplier Switches	Financial Health-Checks
2017/18	87	140
2018/19	150	138
2019/20	170	171

These changes can make a huge difference to households, saving money with minimum effort, but they also underline that although these messages are common and regarded by many as regular 'must dos', there are households throughout Angus that may not realise that they may be entitled to forms of state benefit that could significantly enhance their household budget.

1.3.1 Angus Home Energy Advice Team (HEAT)

The Angus HEAT offer tailored advice and practical support, visiting homes where necessary to guide households as to how they can save energy and manage their home. Operating for a number of years they have obtained some positive results for local households.

Type of Assistance	Volume of Support/Outcomes
Home Visits	181
Enquiries	681
HEAT Events (talks and sessions)	14
Estimated reduction in fuel bills (annual)	£51,803
Savings via Behavioural Advice	£72,152
Savings via Measures Installed (annual)	£32,486
Debt Write-Off (Home Heating Support Fund)	£20,803

Source: Scarf, Angus HEAT 2021/22

The Home Heating Support Fund is dedicated for householders who are experiencing financial difficulties, such as a top up amount which can be put toward their energy bill, or towards any debt they may have with an energy supplier. Eligibility criteria does apply, but as part of the application process households will receive a holistic assessment of their circumstances and individual situations before the best course of action is agreed.

The data outlines that there are ways to help reduce fuel bills, whether it be via new energy efficiency measures or simple behaviour change. It is clear that this service still has a crucial role to play for Angus residents, not only for cost savings but also to reduce carbon from domestic emissions.

3.1.2 Home Energy Efficiency Programme for Scotland (HEEPS)

The HEEPS fund is an area-based scheme run throughout each local authority area in Scotland, targeting homes with poor energy efficiency and aiming to reduce fuel poverty. Funding is allocated each year and used by the local authority to focus on particular areas.

Year	Funding	Number of Properties
2017/18	£1.3m	409
2018/19	£1.3m	206
2019/20	£0.99m	161
2020/21	£1.6	*212(estimated – Covid delays)
2021/22	£1.5m	*165 (estimate)

Through a funding program of around £6.7m, around 1,150 Angus properties have benefited from HEEPS since 2017, with external wall insulation installed at little or no cost to the homeowner. The area based schemes have been located in Arbroath, Brechin, Forfar and Montrose, with other locations also benefiting having linked to the funding through other Council capital programmes. A portion of the HEEPS allocation has also been utilised to fund the Angus Home Energy Advice Team (HEAT).

3.1.3 Warm Homes Fund

The Warmer Homes Scotland fund helps people in need make their homes warmer and cost less to heat by changing homes to use energy more efficiently. The scheme is one the main funds to which SCARF/HES will refer eligible households. It is open to private sector housing and households must also meet qualifying criteria in order to qualify for assistance worth up to around £5,000 to make their home warmer and more energy efficient.

Over the past five years there have been 2,242 measures installed in Angus households.

Some of the measures include boilers; room thermostats; radiators; wall insultation; heat pumps; light bulbs; loft/floor insulation.

Year	Measures Installed
2017/18	535
2018/19	443
2019/20	358
2020/21	265
2021/22	641

The fund aims to assist households who are low income or where a household member is considered vulnerable due to age, health or mobility reasons. The Council regularly promotes the scheme via our website and social media channels to encourage households to check if they qualify.

3.1.4 Eco Flex

The Council recently launched their Eco Flexible Eligibility (Eco 3) Pilot Scheme following delays due to the pandemic. The funding for the scheme derives from Energy Company Obligation (Eco), where the large UK energy suppliers are obligated to promote and cover all or part of the costs of measures that improve the ability of low income, fuel poor and vulnerable households to heat their homes.

The Angus Eco Flex scheme is administered by SCARF who have in turn appointed two contractors to undertake the pilot scheme. Eligibility criteria relates to household incomes, supporting homeowners earning under £29,500 per year and who receive a qualifying benefit, with particular areas of Angus targeted using dataset evidence based on the housing stock attributes and the incomes of those households. Where eligible, participants will in most cases receive full grant funding toward the measures, whilst others may be required to make a small contribution. During 2021/22 pilot there were some notable outcomes with the average participating household receiving around £3,280 toward new measures.

Properties Completed	293
Measures Installed	548
CO2 Savings (tonnes)	154.39
Value of ECO Funding	£961,289

Source: Scarf, Angus ECO 3 Pilot, 2021/22, Volume of Properties, Measures, Carbon Savings, and Eco Funding.

Eco 3 has now come to an end but the Council are pleased to announce that an Eco 4 Scheme has been approved and will launch in early 2023, running until 2026. The scheme will be delivered and managed by SCARF following the procurement of appropriate installers.

3.1.5 Responding to the Fuel Price Crisis

Since early 2022 there have been a number of ad-hoc schemes funded and launched by the Scottish Government in response to the fuel price rises. Both schemes were administered by Scarf, applying household eligibility criteria (low income and/or health reasons) to access vouchers ranging from £100 to £250 per household.

	Winter Flexible Fund (Winter 2021/22)	Heat Well Angus (Oct-Nov 2022)
Type of Support	Fuel Vouchers	Fuel Vouchers
Fund Value	£100,000	£400,000
Number of Households Supported	630	1,558
Number of People	976	>2,000 (estimated)
Number of Children	817	1,484

The numbers highlight how crucial the funding has been for Angus residents with over 2,000 households seeking and obtaining financial assistance toward their fuel costs. Around 2,000 children have benefited from the funding, ensuring that their homes are warm during the difficult winter months. However, the funding was not sufficient enough to cover the entire winter period and the larger Heat Well Fund (£400,000) was allocated in a number of weeks, further outlining that almost half a million pounds was rapidly utilised prior to entering the colder winter months and further financial assistance is needed.

3.2 The Route Map – Delivering Affordable Warmth and Zero Emissions

There are a number of schemes available to Angus residents but it is clear there remains a significant challenge to reduce emissions and rates of fuel poverty created by the existing homes. Recognising this challenge, the Housing to 2040 strategy sets out the opportunities and commits to significantly increase investment toward decarbonised heat from 2025. There will be continued delivery of energy efficiency investment to support fuel poor households, making homes easier to heat but also reduce the costs impact of the zero emissions systems, particularly for remote and rural communities. Other assistance commitments include:

- Widening the reach of the area based schemes (HEEPS) to support higher numbers of households in or at risk of fuel poverty – this will include increasing the volume of 'whole house' retrofits; and adopting a 'zero emissions first' approach to heating systems.
- Continued support via interest-free loans via Home Energy Scotland (HES)
- Evaluate the area-based equity loans pilot to consider wider roll-out
- Extend the Social Housing Net Zero Heat Fund to 2026 to accelerate the decarbonisation of social stock.
- Establish a Green Heat Finance Taskforce in 2021 to explore new and innovative financing mechanisms.

Issues for consideration

- Continue to plug all available resources offered via central HES – we need to maximise customer uptake
- What about those households that do not qualify for grant funds (usually due to income thresholds)
- Anticipated rise in fuel poverty rates due to energy price hikes, & economic/employment affects from the pandemic
- Take advantage of investment opportunities that may arise – both private and social stock – costs will be biggest barrier.

4. Improving Energy Efficiency

4.1 Energy Performance Certificates (EPC)

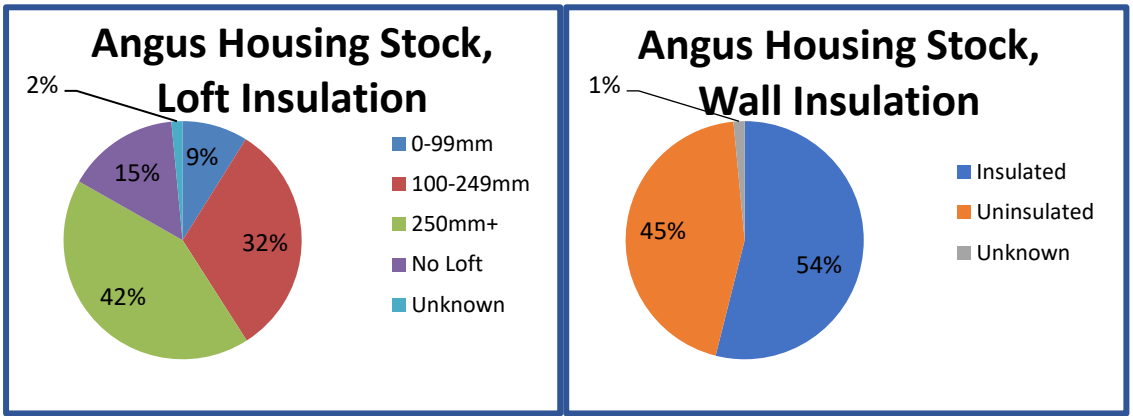
The drive to improve the energy efficiency of our homes remains a focal point, ensuring not only are households able to live in warm, safe and secure, comfortable surroundings, but also ensuring that we all do our part to reduce our fuel usage and the resulting carbon emissions which harm our environment.

Tenure / EPC Rating	A-B	C	D	E	F-G	Unknown
All Properties	7%	33%	37%	15%	7%	1%
Owner Occupied	6%	28%	40%	16%	8%	2%
Social	9%	52%	26%	5%	1%	7%
Private Rented	6%	20%	31%	21%	12%	10%
Rural	12%	19%	26%	22%	16%	5%

Source: Home Analytics, Scotland, V3.7 Report - Angus

Data from the Home Analytics outlines that around 40% of Angus dwellings have an EPC rating of A-C. From the table above we can see how performance varies in each tenure, from Social Sector (61%) to Owner-occupied (34%), Rural (31%), followed up by the Private Rented Sector (26%). The SHCS (2017-19) estimated that around 29% of Angus households were EPC rated B or C, significantly below the national average of 45%.

As previously mentioned, Angus households are estimated to use more domestic fuel than the national average and thus average local fuel spend is considerably higher. There are a range of influencing factors but none more so than the fabric of the property, with many households estimated (Home Analytics, V3.7 Report – Angus) to have inadequate wall and/or loft insulation.



These percentages above translate that an estimated 24,500 Angus dwellings do not have wall insulation, and around 30,500 dwellings do not have adequate loft insulation. Of course the caveats being that not all properties would be suitable for wall insulation, nor may it be technically feasible, and not all properties do in fact have a loft.

The data does however paint a stark picture that the local housing stock requires substantial investment to help drive up energy efficiency ratings. It is also worth noting that the data also estimates that around 92% (50,100) of Angus households have at least double glazing installed. This suggests that householders do have an awareness of energy efficiency issues and large investments have been made. However the fact that a relatively inexpensive measure such as loft insulation appears to have been less utilised, it may suggest that other energy efficiency improvements, such as glazing upgrades, could also in part be due to aesthetic reasons.

The 'Housing to 2040' national housing strategy outlines the commitment for all domestic properties to contribute to tackling climate change, reducing the emissions caused by housing and their fuel sources. The vision is for all of Scotland's homes to reach EPC band C by 2035, with staggered milestones for each housing tenure. Leading by example, the minimum standards will apply in the social sector, private rented sector, and then rolled out for the owner-occupied sector. There will obviously be repercussions for each sector and each and every one of us as we ascertain the investment requirements from landlords, the potential impact on local trades and their ability to deliver the upgrades, the sheer volume of works, the costs to homeowners, and the impact on market supply due to new minimum standards. The roll-out of the Angus Eco Flex 4 scheme will provide some private sector home owners with the opportunity to improve the energy efficiency of their property.

4.2 Social Sector

The Energy Efficiency Standard for Social Housing (EESSH 1 & 2) aims to improve the energy efficiency of social housing, whilst reducing energy consumption, fuel poverty and carbon emissions. The EESSH targets are:

- EESSH1 (originally by end of 2020) where all properties are to achieve EPC banding D or C, depending on the type of property.
- EESSH 2 the long-term target is to achieve net zero emissions of all greenhouse gases by 2045, with an interim milestone that by 2032 all social housing meets EPC band B, or as energy efficient as possible. In addition, by 2025 no social housing below EPC band D should be re-let.

Angus Council is making good progress toward the targets with just under 80% of properties currently meeting EESSH 1. During 2020/21 around £2.9m was invested in bringing 280 properties up to EESSH 1 standard, with almost all of the funding deriving from the Council's own resources. The pandemic had a significant impact in performance in this area.

Number of Properties	Number of Properties meeting EESSH 2020/21 (as %age)
7709	6086 (78.9%)

There are around 1623 properties that do not meet EESSH 1 and are exempt. Of these around 75% (1200) are houses (other than detached), and around 16% (264) are flats. The reasons for exemption are either technical, where works may not be feasible at the current time; social, where it may not be currently appropriate to cause upheavel to the tenant (currently exacerbated by the pandemic where many customers were reluctant to allow access to properties due to shielding or self-isolation); or where the property is long-term void.

The Housing Assets service are currently working to determine how we will deliver this strategic requirement for each of our 7700 properties, the budget costs and implications, resource planning, and any scope for promotion and use of innovative technologies where possible.

Housing to 2040 sets out the ambition for energy and emission standards in all new homes, with a main policy driver being that all new homes delivered by social landlords to be zero emissions homes by 2026. A new zero emissions affordable homes strategy will be developed from 2021, for which the Council eagerly awaits to determine the opportunities and challenges that lie ahead.

4.3 Private Sector Housing

Minimum standards were introduced for **private rented housing** and were due to come into force April 2020, however the launch has been delayed due to the pandemic and as things stand they will be introduced in 2025 and we await further update as to when the regulations will be laid in parliament. Although they have been delayed we anticipate a lead in time of a few years prior to formal adoption.

The new standards set out as follows:

Private sector landlords would be obligated to improve their properties, installing a wide range of measures that would ensure they meet the minimum standards, whether it be a new boiler/central heating system upgrade; new windows/doors; floor/loft/wall insultation.

Due Date	Properties in Scope	Minimum EPC Band
1 April 2020	Change of tenancy	EPC E
31 March 2022	All Properties	EPC E
1 April 2022	Change of tenancy	EPC D
31 March 2025	All Properties	EPC D
***1 April 2028**	All Properties	EPC C

*anticipated to be brought forward from 2030 (Housing to 2040)

It is widely anticipated that the local authority will be responsible for verifying EPCs as part of the current registration process for all private rented properties.

There are however exemptions to the standards which can last up to 5 years, these range from the recommended measures having a negative impact of the fabric or building structure; excessive costs; third party refusal; listed buildings; and protected spieces that cannot be disturbed.

For excessive costs, it has been proposed that the following cost caps be introduced:

£5000 to reach EPC E	An additonal £5000 to reach EPC D

The Council has been working in preparation of the new launch date to ascertain the volume of Angus properties that will not meet the standards. Since June 2019 we have collected 2,216 EPC data from landlords, which equates to just under one third of all private rented sector properties. The table below outlines the EPC ratings.

EPC Rating	A	B	C	D	E	F	G	TOTAL
Number	0	48	711	915	380	135	27	2216
As %age	0	2%	32%	42%	17%	6%	1%	100%

We can see from the sample set that a large number of properties will not meet the new minimum standards, both in the short and long-term. We continue to engage and liaise with landlords about their new responsibilities, offering information, advice and signposting them to relevant partners for further assistance to improve their property.

Home Analytic data (V3.7 Report – Angus) estimated that around 64% (4,600) of private rented properties currently are currently EPC bands D to G and will not meet the proposed 2028 minimum standards. Of these around 2,300 are bands E to G and will therefore require more improvement works and greater investment to reach the minimum standards by 2028. This represents around one third of all Angus private rented properties and therefore there could be significant disruption to the market supply, both for tenants when works are to be carried out or for landlords who may opt to dispose of properties due to the financial burdens, thus denting supply levels.

Consultation for a minimum energy efficiency standard in the **owner-occupied sector** was undertaken by the Scottish Government in early 2020, seeking to reach parity with the other sectors and introduce regulations by 2025 to require owner-occupied private homes to reach a minimum of EPC C by 2035.

The Council supports the principle of unifying minimum energy efficiency standards to help achieve tenure equality, however the scale of the tenure (around 43,000 in Angus) will undoubtedly mean that large volumes of local housing does not meet the minimum standard.

Home Analytic (V 3.7 Report – Angus) data estimated that:

- around 64% of owner-occupied properties were EPC band D or below.
  This equates to some 27,500 properties that will require a varying degree of measures to reach the minimum standard by 2035.

- around 62% of these (17,200) are band D and will therefore in principle require less improvement works.

- a more pressing issue is the 24% (10,300) estimated to be EPC bands E to G, likely meaning they will require more energy efficiency measures to be installed and at greater cost to the homeowner.

There are obvious concerns as to what impact this may have on the local market, the local supply chain, and householders ability to meet the costs, all in a relatively short timeframe. The Housing to 2040 route map outlines the objectives including the commitment for further consultation on the proposal, providing the Council and the public an opportunity to engage. A key element of the whole proposal will be early engagement and awareness raising, allowing homeowners ample time to plan works and the associated finance.

Issues for consideration

- 59% of all properties are band D or below, equates to almost 32,000 angus properties that will require some form of improvement measures to meet minimum standard (mainly Private Sector issue).
- Costs for home-owners – planning upgrades; accessing affordable finance; local supply chains ability to cope?
- Technologies & Infrastructure – is there an awareness, both from users and business; are there viable solutions. Do they represent VfM? Affordability?
- Disruption to the markets – PRS, for tenants whose property requires improved measures; and L/Ls who may opt to leave the sector. Homeowners – impact on values? Potential supply issues across the board.

5. The Changing Climate – The Impact of Domestic Emissions

5.1 Climate - Impact on our Homes

The Climate Change Bill (2019) was developed in response to the global climate emergency, the changing environment and the urgent need to reduce our greenhouse gas emissions across all sectors in society. Low carbon living remains a focal point, ensuring that we all do our bit to embrace changes in the way that we live – from the fabric of our homes including its energy efficiency, to domestic fuel types, and how we behave managing the homes in which we live.

There is undisputed correlation between rising carbon emissions and changes in land temperature in Scotland. From 2005 to 2014 it was 0.9C warmer than over the same period from 1961 to 1990. Over a similar period (comparing 1961-1990, & 1981-2010), rainfall has increased by around 7%. For Scotland and the Uk, 2022 was the warmest year on record (average temperature 8.5C and 11.1C respectively), and the hottest 10 years on record have all occurred since 2002. In general, we are experiencing warmer and wetter summer months, and cooler and wetter winter months. These climate changes will have a direct bearing on our domestic buildings, where the fabric may not fully embrace the weather changes

.

Warmer Seasons

During warmer spring-to-autumn weather, the moisture removal capacity of outdoor air may be reduced, meaning additional ventilation may be required to adequately remove moisture produced inside a building.

Cooler Seasons

During wetter seasons reverse condensation may occur, where damp walls are heated by solar radiation to the extent that moisture can migrate towards the cooler interior of a building

Source: UK Climate Change Risk Assessment 2017 Evidence Report – Summary for Scotland

The Scottish House Condition Survey (2017-19) estimates that around 16% (8,640) of Angus homes suffer from condensation, and 6% (3,240) from damp (either rising or penetrating). These rates are double the proportions experienced at a national level, therefore suggesting that Angus homes are more susceptible to harsher weather conditions. It is likely that the coastal geography will have direct bearing on these moist atmospheric conditions and will only be exacerbated by further climate changes, with potential negative affect on the condition of our stock and the lives of the inhabitants.

Data from the Angus Council Environmental Health service outlines that there have been 156 referrals relating to dampness and/or condensation over a 6-year period. This equates to around 34% of all

housing related referrals to the service, surpassed only by Below Tolerable Standard (BTS) referrals (245).

Dampness/Condensation complaints were most prevalent in North and East HMAs, with Arbroath (27%), Montrose (23%), Carnoustie (12%), Forfar (12%) and Brechin (12%) the most common settlements for complaints.

Coastal towns rank highest in terms of the number of dampness / condensation complaints, underlining the theory that properties exposed to harsher coastal weather elements are more likely to suffer from deterioration.

Year	Number of Dampness referrals
2015	52
2016	47
2017	29
2018	16
2019	16
2020	12

A vast majority of referrals come from private rented sector properties, and although we can see a reduction in the number of referrals, it is likely that there are far greater instances of dampness/condensation but many of these are resolved by the landlord prior to Council intervention.

In addition to these issues, the SHCS (2017-19) also reports on the general condition of Angus homes. From the table below we can see that an alarming volume of properties are estimated to have varying degrees of disrepair. The disrepair represents one problem, but with changing weather patterns and increased climate-related hazards, home-owners must be mindful that should deficiencies remain untreated they could further deteriorate at an even greater pace.

Scottish House Condition Survey	2015-17	2016-18	2017-19
Disrepair	87%	86%	85%
Disrepair to Critical Elements	77%	75%	75%
Urgent Disrepair	34%	28%	29%
Extensive Disrepair	2%	2%	4%

5.2 Climate - Impact on our Households

Climate impacts and extreme weather events can affect anyone but some people have the potential to be more affected than others. This derives not just from their exposure to the event, but also on their social vulnerability and how well they are able to cope with and respond to weather events. It is the people and communities experiencing multiple causes of vulnerability that are most vulnerable.

Social vulnerability comes from the interaction of a number of personal, environmental and social factors:

- Personal, such as age and health, which affect sensitivity to climate impacts.

Older people, the very young and people in poor health or those with poor mobility and access tend to be more sensitive to climate impacts due to their higher physical susceptibility relative to others in the community. These physical susceptibilities can lead to other traumas such as developmental and behavioural impacts, particularly for very young children.

- Environmental characteristics, such as availability of green space, and quality of housing.

People can also experience different intensities of climate impacts as a result of the type of housing they live in. People with basements are more likely to be affected by flooding, whilst temperatures in high-rise buildings can considerably increase during heatwave events. As well as these, lack of green

infrastructure can also have a detrimental impact, whether it be flooding or heatwaves, and it's particularly common in urban areas.

- Social context, such as levels of inequality and income, strength of social networks, cohesive neighbourhoods.

Income is an important detriment of how people are likely to be affected by climate impacts. They may have a lower tendency to seek out information and assistance, but they may also lack the means to afford necessary insurance, or take the necessary steps to adjust their home to meet the challenge of climate change – such as ongoing repairs, adequate insulation and ventilation. People with low adaptive capacity may also be less able to prepare for, respond to and recover from climate events. People who tend to endure short length of residency in an area may be unaware of local climate issues, as will those who are socially isolated who lack the necessary support networks.

Issues for consideration

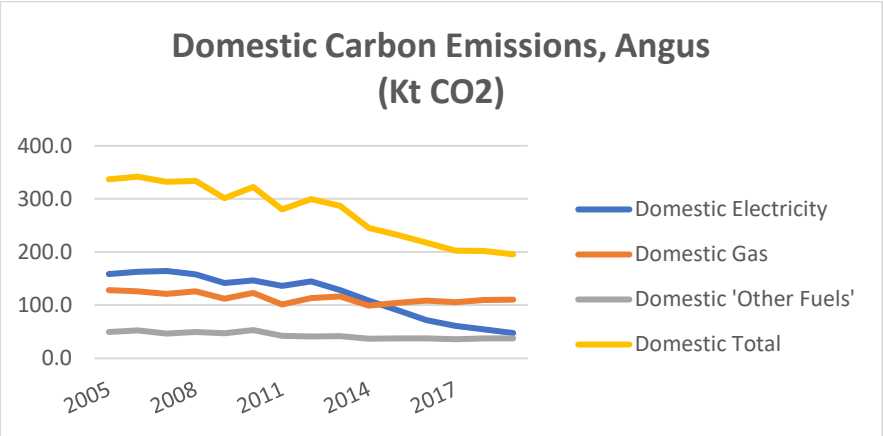
- It is clear that there will be enhanced risks to building fabric from increased moisture, wind and driving rain. More research is required to better determine the future levels of risk throughout Angus and what further adaptation steps might be appropriate.
- Communities are more aware of climate change issues and what impact this will have on weather patterns, but more thought and awareness must be extended to how these changes will impact the fabric of our homes, both present and long-term.
- These issues relating to the deterioration of our homes can affect our lives, from financial burdens to rectify repairs to health-related issues for the inhabitants living in damp, poorly insulated, too cold/warm homes. Potential for long-term trauma – both physical and mental due to these changes – impact on other services.

To combat the increasing threat of extreme weather events, a number of community and flood resilience groups were formed throughout Angus in areas where there are elevated risks. Working in partnership with the Scottish Environmental Protection Agency (SEPA) and neighbouring local authorities, a wider Flood Risk Management Strategy was developed to inform Local Flood Risk Management Plans (2022-28). These plans will encompass community engagement to involve local people in the development of flood related projects and initiatives, ensuring the needs of the aforementioned vulnerable groups are identified and accommodated and our places can be protected and remain viable through changes in our climate. A Flood Protection Scheme was undertaken in Brechin, whilst Arbroath will soon also benefit, protecting residents and safeguarding businesses for years to come, and providing the secure foundations for wider placemaking and enhanced quality spaces.

5.3 Reducing Emissions and Decarbonising our Homes

The Department for Energy and Climate Change (DECC) estimates that the average person in Angus is responsible for emitting 5.8 tonnes of CO2 per year, slightly above the Scottish national average (5.7 tonnes) and the Uk average (5.2 tonnes). This figure derives from the estimated 680,000 tonnes of CO2 emitted in Angus by all forms of industry, agriculture, commerce, transport, public sector and domestic services.

The eye watering volume of CO2 (Carbon Dioxide) is the main greenhouse gas and accounts for around 80% of all greenhouse gas emissions therefore it is imperative that there is increasing emphasis on reducing the emissions. The domestic sector in Angus has risen to this challenge and although there is still some way to go, domestic emission levels have been steadily decreasing for the past 15 years.



[2]

We can see the emissions reduction across the range of domestic fuel types, falling from 336,000 tonnes in 2005 to 195,000 tonnes in 2019, which equates to a 42% reduction, whilst at a national level domestic emissions across Scotland have fallen by around 40%. Over the same period total emissions (from all Angus sectors) reduced by 37%. This indicates that the domestic sector in Angus is slightly ahead of the curve as people become more aware of the environment and their ability to reduce fuel consumption and save money.

5.4 What does the future hold?

The 195,000 tonnes of domestic carbon emissions equates to around 3.6 tonnes per household (54,000 households). To reach the Scottish Governments Net Zero (2045) target the Energy Savings Trust (EST) estimates that the Uk will need to reduce heating emissions to around 140kg CO2 per household.

We will be unable to reduce carbon emissions from our homes if we continue to use natural gas or oil fuels. There are currently around 44,000 dwellings in Angus reliant on these fuel sources. We require a substantial shift in heating technologies towards renewable energy from a variety of sources such as solar water heating, extracting latent heat in the soil, outside air or a nearby water source using a heat pump. It is likely that we will require homeowners to install their own Photovoltaic (PV) or wind generation systems to power the renewable technologies using 100% clean energy.

Another option for decarbonising heating is to change the gas running through the national network, incorporating higher volumes of biogas or hydrogen. This will however pose a huge infrastructure challenge. District heating is another viable option for heat decarbonisation, connecting up properties through a series of highly insulated pipes to an energy or heat source from which heat is distributed throughout the network.

Recognising the drive toward zero carbon, the Housing Assets service are currently working to identify a number of opportunities to reduce emissions in our housing stock. Data gathering will be key, with a number of exploritary research projects identified to ascertain what may or may not work, including:

- wider regeneration incoporating renewable energies and zero carbon methodologies
- individual/cluster building performance monitoring prior to energy improvements
- use of a range of integrated power sources, incoporating heat pumps, batteries, and sewerage heat recovery

[2] Source:https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019

These projects will rely on funding availability, but they will enable us to develop information and understand how we can replicate best practice elsewhere.

5.5 The Council Approach - Reducing Emissions

Greener Standard
All council new builds are to greener standard (Silver Aspects 1 & 2). A property must satisfy the first two elements (Carbon Dioxide Emissions and Energy for Space Heating) under section 7, Silver Level, of the 2011 Building Regulations.

Zero Emissions Heating Systems
Mindful of the requirement that new buildings consented from 2024 will use zero direct emissions heating, the Council have adopted the approach that all of our new build developments will not use gas, instead using a combination of the following:

- Air Source Heat Pump (ASHP)
- Mechanical Ventilation Heat Recovery (MVHR)
- Photovoltaic (PV)

Part of this approach will encompass space to accommodate battery storage, but this will not be provided until we have been able to assess how the homes perform without batteries.

5.6 LHEES pilot
The Council commissioned research for their pilot Local Heat and Energy Efficiency Strategy (LHEES) as part of the Scottish Government phase 3 pilots. The brief was to identify renewable heating technologies which could decarbonise and reduce the cost of heat in properties in rural parts of the authority, where it had been identified that low population can mask the prevalence of fuel poverty.

The findings can be summarised as follows:

- air source heat pumps are likely to be a suitable low carbon heat option for most property types
- biomass boilers could be used in large rural, detached properties with high heat demands
- energy efficiency measures should be installed first, where possible
- hard to treat properties of an average size can be treated with heat pumps to decarbonise heat and reduce fuel poverty. The technology can be widely deployed and offer a running cost saving to most properties, and decarbonise heat
- heat networks are unlikely to be financially viable within the rural pilot zones due to the low density of heat demands (thus other areas with higher heat densities are more likely to be suitable)
- Angus is well suited to renewable power generation – multiple utility scale development in the area; higher than average wind resource – meaning local renewable electricity could be used to reduce electrical import costs

The findings certainly present a number of limited opportunities to decarbonise heat and reduce fuel poverty in rural Angus and beyond by utilising the renewable heating technologies, with particular focus on heat pumps. There will however be a requirement to unlock capital funding to make most of these options viable, including reductions to capital and/or operating costs, particularly for heat networks.

As things stand, the Council are to prepare and publish a LHEES and delivery plan by 31 December 2023. The Council are currently producing a tender for technical consultancy services to support the creation of the Angus LHEES and delivery plans.

Issues for consideration

- Creating a viable policy network will lay the foundations for change, but we cannot underestimate the scale of the challenge in terms of infrastructure and costs
- Communicating the transition to people will be difficult - climate change has become a mainstream topic of conversation but there appears little appetite or knowledge of what decarbonising our homes will actually mean (upheaval, costs, getting to know new technologies/systems) – raise awareness !
- Scope to introduce renewable technologies, both rural and urban settings. Viable options for each, but requirement to unlock capital funding / reduce capital and/or operating costs.