



Climate and environment emergency executive panel

Date: Tuesday, 19 October 2021

Time: 16:00

Venue: Remote access, [Venue Address]

Committee members:

Councillors:

Hampton (chair)
Stonard (vice chair)
Carlo
Lubbock
Oliver
Osborn
Thomas (Va)

For further information please contact:

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Agenda

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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**

3 - 6

To approve the accuracy of the meeting held on 31 August 2021

4 **Carbon Footprint Report 2020-21**

7 - 28

Purpose - To consider the council's carbon footprint report for 2020 - 2021

5 **Retrofitting Work in Norwich**

29 - 34

Purpose - To give an overview of the retrofitting funding being accessed by the council in 2021/2022.

Date of publication: **Tuesday, 12 October 2021**



Climate and environment emergency executive panel

16:00 to 17:20

31 August 2021

Present: Councillors Hampton (chair, following appointment), Stonard (vice chair, following appointment), Carlo, Giles (substitute for Councillor Oliver), Lubbock, and Osborn

Apologies: Councillors Oliver and Thomas (Va)

1. Appointment of Chair

RESOLVED to appoint Councillor Hampton as chair for the ensuing civic year.

2. Appointment of Vice Chair

RESOLVED to appoint Councillor Stonard as chair for the ensuing civic year.

3. Declarations of interest

There were no declarations of interest.

4. Minutes

RESOLVED to approve the accuracy of the minutes of the meeting held on 18 February 2021.

5. City Vision Sustainability Group Overview

(Anthony Hudson, Founder and Creative Director at Hudson Architects and Emma Smith, strategy officer (Norwich City Council) attended the meeting for this item.)

(Copies of the presentation were circulated to members after the meeting and it is available on the council's website with the agenda papers for this meeting.)

Emma Smith, strategy officer and Anthony Hudson gave a presentation on the work of the City Vision Sustainability Group, of which they were both members together with Asher Minns (Tyndall Centre) and Paul McCarthy (chair, Norwich BID) who had sent apologies as they were unable to attend this meeting. The members of this group also included the council's environmental strategy manager. The presentation gave a broad overview of the composition of the group and its proposal to set up a Climate Commission for the city. Anthony Hudson commented on the establishment of the Commission at a local level, as an independent group that would report back

to the City Vision and Covid-19 Recovery Group and comprise commissioners from a wide range of interests from private and public sector, and social led enterprises. The Tyndall Centre, through Asher Minns, had connections with Andy Gouldson, chair of the Leeds Climate Commission, who was advising on the process. The strategy officer advised members on the timescale leading to the launch of the Commission in November 2021 to coincide with COP26. Members had a role in promoting the Commission in their wards and in feeding back what was happening in their wards.

During discussion members commended the work of the City Vision Sustainability Group and welcomed the proposal to establish a Norwich Climate Commission.

The strategy officer, together with Anthony Hudson and the head of strategy, engagement and culture, answered members' questions.

Members were advised that information packs would be provided to members and information made available on e-Councillor once details had been finalised. Further information on the governance arrangements for the establishment of climate commissions and the role of commissioners was available on the Place-Based Climate Action Network (PCAN) website¹. The commissions should be collaborative groups and have an advisory role to promote the target of zero carbon by 2050 and showcase schemes that went well. The number of commissioners on climate commissions varied from 15 to 30, and they represented a wide range of interests that included grass roots activists to politicians and educationalists. Sub groups could be formed if there was a lot of interest. The areas of interest that should be represented included travel, energy suppliers, buildings operations, household practices, education, the Local Enterprise Partnership (LEP) and people involved in the economic aspects of climate change. Members were advised that the use of "sceptic" in the presentation reflected a desire for commissioners to be prepared to challenge ideas and proposals rather than any other connotation.

The panel was also interested in how members would be informed of the work of the commission going forward and how recommendations from the commission would feed into the democratic process of the council. Officers would report to the panel as appropriate and update members through e-Councillor. The City Vision partnership would consider the communications strategy when establishing the commission.

Members were interested about democratic involvement in the climate commission. It was noted that there were councillors on existing climate commissions. There was an expectation that the commission would publish an annual report to monitor its progress which would be considered by the City Vision 2040 and Covid-19 Recovery Group and the council or cabinet as appropriate. It was expected that the commission would develop a strategy identifying where the best evidence was and provide recommendations on carbon reduction that could be picked up by its partners. Members also noted that officers were involved in this work and would feed into the council at service level. An audit was being conducted to identify gaps in the council's response to the climate emergency and provide a broad picture of the council's roadmap for the direction of travel subject to resources being available. The creation of the commission was part of this work. Members were assured that

¹ <https://www.pcancities.org.uk/climate-commissions>

retrofitting would no doubt feature as an action. It was acknowledged that government funding was necessary at a local level to increase carbon reduction and a member questioned how this would be achieved if the commission should not be used to lobby. Members were advised that the strength of being part of a network (PCAN) was that it could provide evidence to government on the need for funding. The commission was very much about local action but could signpost and feed into other organisations.

During discussion a member suggested that there were some policies that the council should stop doing or supporting. Members noted that the commission would be aware of the IPCC report and the concern that the climate emergency should be addressed in the next decade. The commission would be independent and should be as ambitious as possible to reduce carbon emissions in transport, energy and buildings and to overcome barriers, such as political or geographical, to effect this change.

Members noted that the City Vision Sustainability Working Group would consider the establishment of an advisory board to oversee the establishment of the commission at its September meeting. The LEP was represented on the working group. Norfolk County Council had been informed of the proposal to establish a climate commission in Norwich.

RESOLVED to thank Anthony Hudson and Emma Smith, strategy officer, for attending the meeting and their presentation and note the proposal to establish a Climate Commission for Norwich.

6. Community Renewal Fund Bids - Update

(Copies of the presentation were circulated to members after the meeting and is available on the council's website with the agenda papers for this meeting.)

Richard Willson, environmental strategy manager, gave a presentation to update members on Community Renewal Fund (CRF) bids and advised members. The government had been expected to announce the outcome of its assessment of bids in July 2021. However, the council had not received any confirmation to date that any of its bids had been successful.

During the presentation, the environmental strategy manager explained that the focus of the CRF100 Day Community Challenge bid for £500,000 was on Mancroft, Heathgate, Mile Cross and Lakenham. These areas had been selected because of the communities' high levels of inequalities and need. In addition, each area had resident-led groups that have demonstrated a desire to take on green spaces or community challenges, with the community engagement team reporting over 20 different start-up projects or enquiries since the start of 2021. Further details of the bid and this project were available from Kate Price, neighbourhood and neighbourhood enabling manager (kateprice@norwich.gov.uk).

Members were also advised that the bids for Sustainable Hydrogen Infrastructure for Transport (SHIFT) was being made through the Norfolk Climate Change Partnership. This project would focus on the HGV fleet requirements of all the councils in Norfolk and sought to identify ways in which green hydrogen via electrolysis could be created locally (via the use of stranded assets like disused landfills) to fuel fleets

without the need for significant and costly grid reinforcement. The Norfolk Climate Change Partnership was also seeking CRF Community Energy Kickstarter funding. This bid aimed to identify the barriers to community energy schemes, create green jobs, and promote localised energy systems. A ready-made community energy programme, developed by local experts, would enable community energy to finally become established in Norfolk. This study would identify suitable assets in Norfolk for solar private wire.

During discussion, the environmental strategy manager and the head of strategy engagement and culture answered members' questions. Members were advised of the 100 Day Community Challenge bid proposed to employ eight paid community engagement officers by the end of the current financial year. The areas targeted had multiple indices of deprivation. The constraints of the funding meant that the neighbourhood team would need to deliver the project in a short timescale and in order to do this, it was necessary to make use of existing networks. Information about the use of hydrogen to fuel HGVs obtained during the SHIFT project would provide the foundation for future bids into the Shared Prosperity fund and other funding streams.

RESOLVED to note the progress of the CRF bids and thank Richard Willson, environmental strategy manager for the presentation.

CHAIR



Committee Name: Climate and environment emergency executive panel

Committee Date: 19/10/2021

Report Title: Carbon Footprint Report 2020 -2021

Portfolio: Councillor Hampton, Cabinet member for climate change and digital inclusion

Report from: Head of strategy and transformation

Wards: All Wards

OPEN PUBLIC ITEM

Purpose

To consider the council's carbon footprint report for 2020 - 2021

Recommendation:

To note the outcomes of the carbon footprint exercise.

Policy Framework

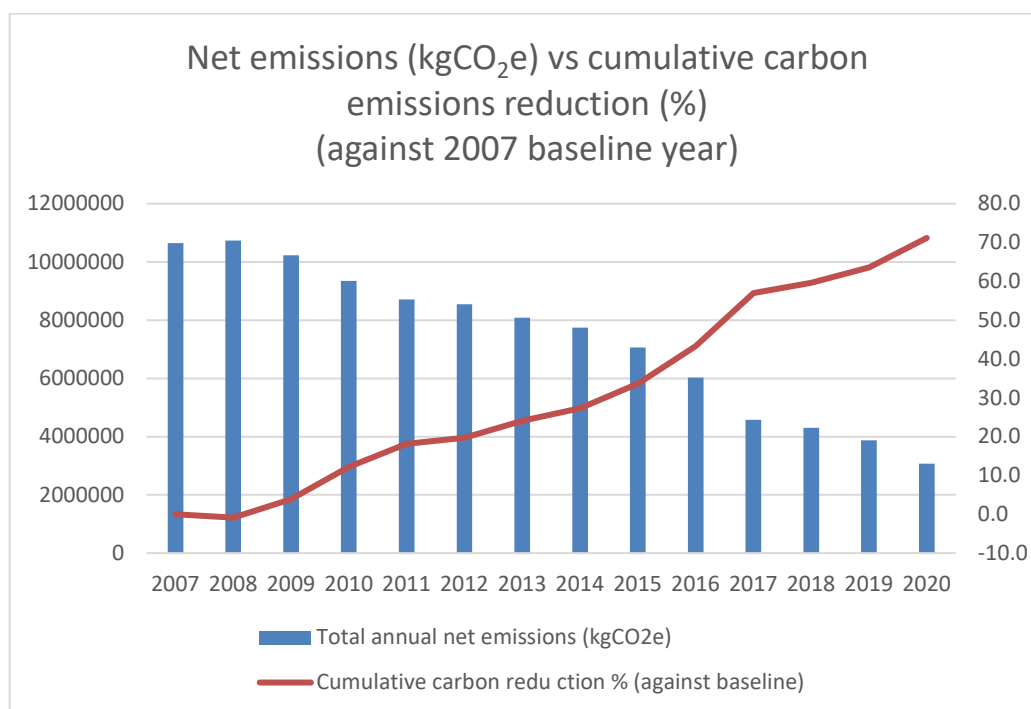
The report helps to meet the corporate priorities for great neighbourhoods, housing and environment, inclusive economy and people living well.

This report addresses achieving net zero by 2030. strategic action in the Corporate Plan.

This report helps to achieve environmental objectives within the COVID-19 Recovery Plan.

Report

- 1 For the period 1 April 2020 to 31 March 2021 a further reduction of 9% in the council's carbon footprint was achieved. This takes the total reduction in carbon emissions to 71.1% (against the 2007 baseline). Graph 1 shows the annual reduction in net carbon emissions (kgCO₂e), against the percentage reduction in carbon emissions over time.



Graph 1: Net emissions vs cumulative carbon emissions

- 2 As we predicted last reporting cycle, the council's carbon emissions have been greatly impacted by the Covid-19 pandemic lockdown restrictions. Contractors were unable to go about all of their duties for a period of time, reducing fuel consumption. Whilst public buildings, such as Riverside Leisure Centre and St Andrews Hall, were closed for a number of months (approximately 9 months and 4 months respectively) creating large reductions in energy consumption. All figures for this reporting period need to be viewed in the wider context of this extraordinary time.
- 3 Carbon emissions data is collected from a variety of sources, and in various units e.g. litres fuel used, km travelled, and kWh energy consumed. These are converted using a set of conversion factors provided by the Department of Business, Energy and Industrial Strategy (DBEIS). This allows all data to be expressed as kg of carbon dioxide, or kgCO₂e. This year the council reduced its carbon emissions by a further 953,114 kg, or 953.1 tonnes. The carbon emissions are broken down into 3 Scopes:

- 4 **Scope 1:**
Gas consumption in council assets (kWh)
Gas consumption in contractor assets (kWh)
Fuel use in council assets (litres)

Scope 2:
Electricity consumption in council assets (kWh)
Electricity consumption in contractors' assets (kWh)

Scope 3:
Grey fleet (km)
Public transport (km)
Contractor fuel use (litres)

2020/21 in context with 5 year average data:

- 5 There have been requests in previous years that officers present the council's energy consumption (kWh, litres/km) alongside the carbon emissions figures (kgCO₂e). Therefore, both sets of figures have been provided below in Table 1. It should be understood, that although these figures are related, they are not directly comparable, due to the use of carbon conversion factors, which are influenced by external aspects at a national level. Since we are bound to use the conversion factors provided by DBEIS, their influence is also outside of our control.
- 6 The third column of Table 1 shows the amount of energy use either in kWh, litres of fuel used, or km travelled. The fourth column shows this year's figures as a percentage increase or decrease against a 5 year average from 2015-20. This is in order to smooth the impact of one-off anomalies in reporting. The fifth column shows the amount of carbon emissions produced by each factor of each scope in the 2020-21 period. Finally, the sixth column shows this year's figures as a percentage increase or decrease against a 5 year average from 2015-20.

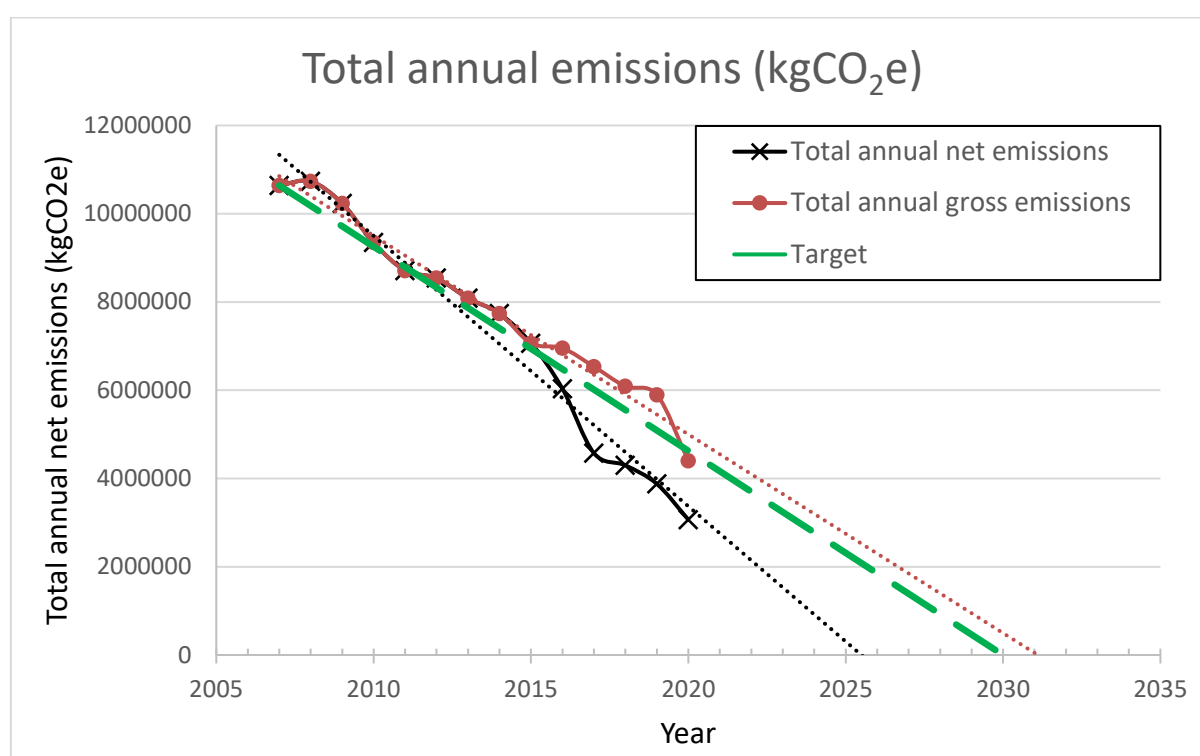
7 **Table 1** - Data by scope:

Scope	Detail	2020-21 energy use	Inc/ dec on 5 year average (2015-20)	2020-21 carbon emissions (kgCO ₂ e)	Inc/ dec on 5 year average (2015-20)
1	Gas council owned buildings	12,094,900 (kWh)	Decrease (12.3%)	2,211,018 (kgCO ₂ e)	Decrease (12.6%)
	Gas contractors	102,370 (kWh)	Decrease (8.32%)	18,823 (kgCO ₂ e)	Decrease (8.4%)
	Fuel council managed vehicles	6,432 (litres)	Decrease (56.4%)	1,567 (kgCO ₂ e)	Decrease (86.4%)
	Total Scope 1 emissions (kgCO ₂ e)			2,231,408	
2	Electricity council owned buildings	6,207,474 (kWh)	Decrease (5.93%)	124,460 (kgCO ₂ e)	Decrease (89.8%)
	Electricity contractors	268,926 (kWh)	Decrease (20.4%)	62,697 (kgCO ₂ e)	Decrease (54.4%)
	Total Scope 2 emissions (kgCO ₂ e)			187,157	
3	Grey fleet (km)	23,527 (km)	Decrease (66.6%)	4,231 (kgCO ₂ e)	Decrease (71%)
	Public transport (km)	10,000 (km)	Decrease (77.2%)	695 (kgCO ₂ e)	Decrease (77.5%)
	Contractors data (km)	562,092 (km)	Decrease (25.7%)	654,394 (kgCO ₂ e)	Decrease (56.6%)
	Total Scope 3 emissions (kgCO ₂ e)			659,320	
	Total emissions – All Scopes (kgCO ₂ e)			3,077,885	

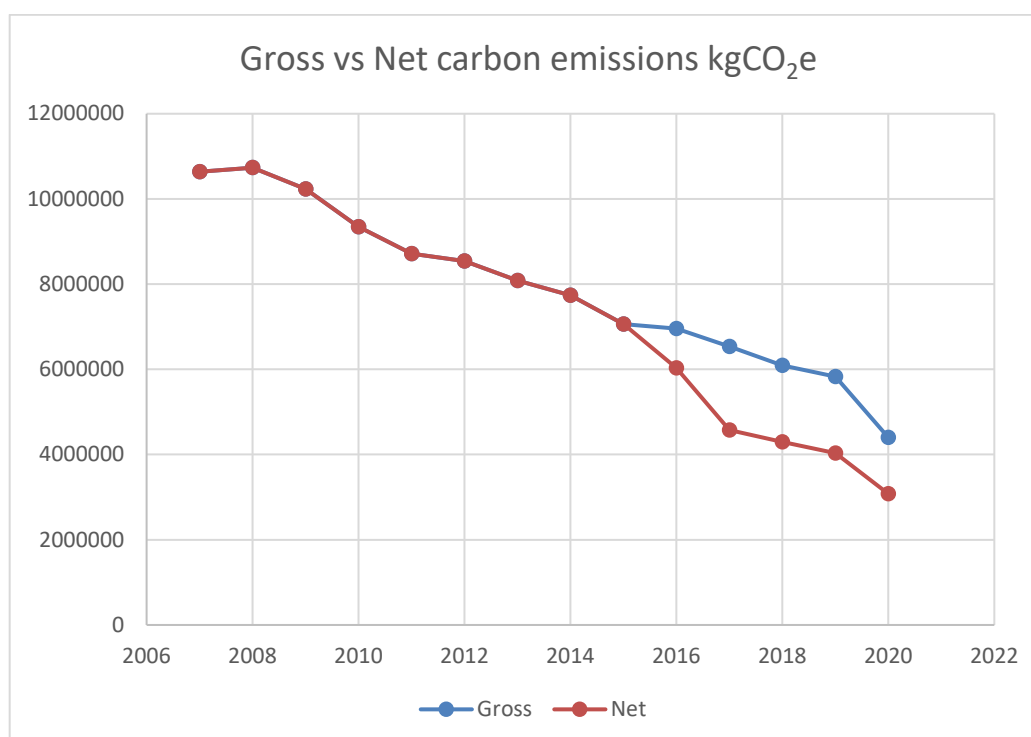
Commentary:

- 8 As stated, every scope of the carbon footprint saw a reduction in carbon emissions during this reporting period, we believe this to be primarily, although not exclusively, due to the impact of Covid-19 lockdown restrictions. The impact of this reduction is so large this year, that it makes it impossible to draw any other meaningful or accurate conclusions from the data.
- 9 Officers are currently producing the third phase of the council's carbon management plan which will detail how we will continue to reduce carbon emissions over the next 9 years, through a combination of factors including continued implementation of energy efficient measures, behaviour management and rationalisation. We will take the opportunities offered by the Covid pandemic to consider more innovative ways of working and use this to inform the new carbon management plan.
- 10 It is no surprise to see that Staff travel, either as part of the grey fleet, or on public transport saw a dramatic decrease during the reporting period. Many staff were forced to move to work from home and continue to do so. It will be interesting to see whether domestic carbon emissions for the city increase as a result of this move being replicated across organisations in Norwich. Whether carbon emissions are simply displaced to domestic properties, rather than business properties. DBEIS release this (NI186) dataset annually, reporting two years previous to the year of release, so there may be a lag in being able to see this possible displacement effect.
- 11 The three largest areas of carbon emissions are: electricity consumed in council buildings, gas consumed in council buildings and contractors fuel use.
- 12 In 2016, the council moved to an OFGEM approved Green Tariff for electricity provision and this saw a significant reduction in the carbon emissions produced from electricity use (see Graph 3). We are still required to report carbon emissions associated with transmission and distribution of electricity, as well as our contractor's energy use.
- 13 We continue to seek opportunities to reduce gas consumption. This year new efficient boilers will be installed at city hall, for an example. We hope that advances in the use of grid sourced green gas, district heating or progresses in hydrogen space heating will facilitate similar carbon reductions in future years.
- 14 In addition, we will be working with contractors to support them to reduce their carbon emissions. One contractor has switched to a certified Green Tariff for their electricity provision. And is trialling electric vehicles as part of their fleet. If this is taken up by other contractors, as we draw closer to the government's target to ban all new petrol and diesel vehicles from 2030, we should expect to see a reduction in all fuel emissions over time. (The government is to consult the heavy goods vehicle (HGV) industry further before making a decision on bringing in a diesel ban for those vehicles from 2030).

- 15 Due to the large drop in carbon emissions this year, we have not opted to use carbon offsetting to support the council's carbon emissions reduction journey. However, this may become necessary again in future years. This will be reviewed with every annual carbon footprint report. The necessity to utilise carbon offsetting is a recognition of two things.
- (a) Norwich City Council began reducing its carbon emissions in 2008, and has been successful at doing this for 13 years. However, it is more difficult to go on saving carbon year on year as the ease of project implementation diminishes.
- (b) In order to achieve net zero carbon by the year 2030 retrofitting our assets will not be sufficient, even if it were economically viable. Some assets, such as City Hall, have extreme technological challenges to the adoption of renewable energy and therefore may struggle to become a net zero asset. A similar rationale would apply to The Halls, which is a difficult asset to retrofit due to its age and listed status.
- 16 Carbon offsets, through a reputable source, will be vital in achieving rigorous carbon emissions reduction targets. Accepted best practice is to use them further down the carbon reduction pathway as a tool to bridge potential technological shortcomings. Therefore, without carbon offsetting, it may be that net zero is not possible by 2030 as some council assets present considerable retrofitting challenges, in terms of their age, listed status, and capacity to utilise renewable technology.
- 17 **Graph 2** (below), shows the path the council needs to follow in terms of year on year carbon emissions reduction in order to achieve the target of net zero carbon by 2030.



- 18 The dashed green line (Target) shows the path we need to take in order to achieve net zero carbon by 2030. If we go above this line, we will not achieve the target date.
- 19 The black line shows net carbon emissions, and again, using previous data, a trendline has been extrapolated forwards and suggests we could become net zero in 2026. Again, this also would suppose that we can go on making the same emission savings indefinitely, which would be unlikely.
- 20 The red line shows the council's gross carbon emissions journey; that is without the Green Tariff and without carbon offsetting. We have extrapolated from the data a trendline which suggests that if the council was able to continue as we have been, that we may achieve net zero by 2032. However, this would suppose that we could continue making large energy efficiency improvements to assets by retrofitting, as we did in the early years of the Carbon Management Programme, and unfortunately this is simply not sustainable, when our varied portfolio of assets are limited in terms of renewable generation capacity. However, during this extraordinary reporting period, we see a drop in the amount of gross carbon emissions, relating to gas use, staff travel and contractor's travel. As suggested previously, we believe this will be impossible to sustain over time, and is for the most part, a direct result of lockdown restrictions. We should perhaps anticipate the gross emissions moving above the green Target line next year, the impact of which could be tempered with carbon offsetting if considered most judicious.
- 21 **Graph 3** below, represents this is a different way.



- 22 This graph shows very clearly the impact of switching to the Green Tariff in 2016. And the reduction in gross emissions during the year 2020/21.
- 23 Since we started calculating the council's carbon footprint in 2008, we have reduced the council's carbon footprint, year on year, taking it from 10,800 tonnes of CO₂e in 2008, to 3,300 tonnes CO₂e in 2021. This is a fantastic achievement. We now have 9 years to reduce the remaining carbon emissions to 0 tonnes per year. Because we cannot go on indefinitely upgrading and retrofitting our assets to make them more energy efficient, we must look to other methods to help achieve our target of net zero by 2030, such as carbon offsetting.
- 24 In addition to the green tariff, and the use of carbon offsetting, we will continue to seek opportunities to implement energy saving technologies on our assets. We 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.

Future projects and project development:

- 25 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.
- 26 The council has received grant funding from the Public Sector Decarbonisation Scheme in 2021 to further develop energy saving projects at City Hall and the new environmental services depot. These include the use of renewables and battery storage.
- 27 The new Air Source Heat Pumps on city hall will work together with the new energy efficient boilers by preheating water before it is boosted by non-renewables. It has been calculated that the (ASHP) will provide 43% of the heating need once commissioned. This will save 104 t CO₂e per year. It maybe now possible in warmer spring conditions to only use renewables for our heating needs.
- 28 The Display Energy Certificate for Norwich City Hall is currently rated as a C. It is anticipated that this work will improve the building's Display Energy Certificate to a B rating. At the start of the Carbon Management Programme in 2007/8 City Hall was rated G. (The lowest energy efficiency) This shift represents a significant improvement in the building's energy efficiency.
- 29 The project highlights the difficulties with retrofitting new technologies into old assets, especially ones which are listed. NPS/ NCC Environmental Strategy have been working to overcome various design issues such as electrical capacity, structural loading limitations and heritage concerns around potential adverse outcomes to a grade II* listed asset.



Image 1) Air Source Heating proposal for City Hall.



Image 2) Suspended steel structure to allow ASHP install on City Hall Roof.

30 In addition, plans are in place for the following:

- Installing EV charges for fleet use (Including NCSL)
- 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.
- New energy efficient gas boilers at City Hall
- River Source Heating at Barnards Yard

- 31 The council will continue to retrofit its estate via the use of its SALIX rolling fund which is recycled using the energy savings of the projects it delivers. The council will also where possible apply for external funding to resource projects which can be resourced via our ongoing capital programme. NCC plans to refresh its carbon management programme in 2021 to accommodate its new Net Zero by 2030 target.

Reasons for the decision/recommendation

To note the outcomes of the carbon footprint exercise.

Appendices:

Appendix A Norwich City Council carbon emissions by scope since 2007 baseline year.

Appendix B Norwich City Council - Carbon Footprint Report

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Appendix A – Norwich City Council carbon emissions by scope since 2007 baseline year.

GHG emission data for period 1 April 2020 to 31 March 2021 (restated)														
	Global kg of CO ₂ e													
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Scope 1	2,231,408	2,419,120	2,576,804	2,714,763	2,593,049	2,499,724	2,640,453	3,121,775	3,446,651	3,136,959	3,549,707	3,745,825	3,873,933	1,682,048
Scope 2	1,509,908	1,956,601	2,012,976	2,239,942	2,462,896	3,432,985	3,836,556	3,478,538	3,644,381	3,774,122	3,972,326	4,311,715	4,691,648	6,603,828
Scope 3	659,320	1,519,577	1,499,753	1,579,869	1,897,304	1,131,715	1,261,406	1,480,944	1,449,823	1,800,339	1,821,824	2,173,565	2,167,385	2,355,434
Total gross emissions	4,400,636	5,895,298	6,089,533	6,534,574	6,953,249	7,064,424	7,738,416	8,081,257	8,540,855	8,711,420	9,343,857	10,231,105	10,732,966	10,641,310
Carbon offsets	n/a	201,770	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Green tariff	1,322,751	1,662,529	1,792,138	1,959,434	920,543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total annual net emissions	3,077,885	4,030,999	4,297,395	4,575,140	6,032,706	7,064,424	7,738,416	8,081,257	8,540,855	8,711,420	9,343,857	10,231,105	10,732,966	10,641,310

To 31 March 2021, Norwich City Council has made a 71.1% carbon reduction against its target

Norwich City Council - Carbon Footprint Report

Summary

In 2008/09 the council produced its first Carbon Management Plan and set a target to achieve a 30% reduction in carbon emissions by 2013/14 (using a 2007/08 baseline). In total, over the 5 year period, a reduction of 24% (29% when weather corrected) was achieved using previous conversion factors. Following the production of the council's second Carbon Management Plan in 2014/15, this target was re-set to achieve a total reduction of 40% in carbon emissions by 2019, against the same baseline. This target was re-set again in 2020, and Norwich City Council now aims to become net zero for carbon emissions by 2030, in recognition of the global climate emergency.

For the year 2020/21, using the 2021 Department for Business, Energy and Industrial Strategy (DBEIS) conversion factors, Norwich City Council has made an additional 9% reduction in its carbon emissions, taking the total reduction to 71.1% saving, against its target of net zero carbon by 2030. The conversion factors can be found here: [Greenhouse gas reporting: conversion factors 2021 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021)

This report has been compiled in accordance with the reporting guidelines originally set by the Department of Energy and Climate Change (DECC). The requirements are that the council publish this report on its website using a standard template, dividing emissions into 3 categories, or scopes.

Since 2008, Norwich City Council has been publishing its emissions through member forums such as the Sustainable Development Panel and Cabinet. This report, as well as a detailed analysis, will be taken to our Climate and Environmental Emergency Executive Panel (CEEPP), a members' panel convened to progress work on the council's climate emergency declaration.

GHG emission data for period 1 April 2020 to 31 March 2021 (restated)														
	Global kg of CO ₂ e													
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Scope 1	2,231,408	2,419,120	2,576,804	2,714,763	2,593,049	2,499,724	2,640,453	3,121,775	3,446,651	3,136,959	3,549,707	3,745,825	3,873,933	1,682,048
Scope 2	1,509,908	1,956,601	2,012,976	2,239,942	2,462,896	3,432,985	3,836,556	3,478,538	3,644,381	3,774,122	3,972,326	4,311,715	4,691,648	6,603,828
Scope 3	659,320	1,519,577	1,499,753	1,579,869	1,897,304	1,131,715	1,261,406	1,480,944	1,449,823	1,800,339	1,821,824	2,173,565	2,167,385	2,355,434
Total gross emission	4,400,636	5,895,298	6,089,533	6,534,574	6,953,249	7,064,424	7,738,416	8,081,257	8,540,855	8,711,420	9,343,857	10,231,105	10,732,966	10,641,310
Carbon offsets	n/a	201,770	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Green tariff	1,322,751	1,662,529	1,792,138	1,959,434	920,543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total annual net emissions	3,077,885	4,030,999	4,297,395	4,575,140	6,032,706	7,064,424	7,738,416	8,081,257	8,540,855	8,711,420	9,343,857	10,231,105	10,732,966	10,641,310

To 31 March 2021, Norwich City Council has made a 71.1% carbon reduction against its target to become zero carbon by 2030.

1. Company information

Norwich City Council is a local authority based in the east of England.

2. Reporting period

The reporting period is 1 April 2020 to 31 March 2021.

3. Changes in emissions

In the year 2020-21 a further reduction of 953,114 kg in *net* carbon emissions was achieved, compared to the previous period, or 953 tonnes. This includes electricity provided under the OFGEM certified Green Tariff. If the Green Tariff carbon reduction is disregarded (to continue to enable direct comparisons with years 2007 to 2015) then total *gross* carbon emissions (including all scopes) fell by 1,494,662 kg over the reporting period. We have not used carbon offsetting this year in order to reduce our carbon emissions.

The following is an outline of sources of change in emissions from the previous year:

Main emissions reductions:

- Impact of the Covid-19 pandemic lockdown restrictions. On 23 March 2020 the UK government ordered everyone to stay at home as a response to the Covid-19 pandemic. Other than essential workers all UK residents were restricted to their homes, excepting the purchase of food, or essential trips, such as attending to medical needs. Children were home-schooled, many people worked from home, whilst many more were furloughed. Restrictions were eased during Summer 2020, but a second lockdown was issued on 31 October 2020 in England, then eased again over Christmas 2020, with a third lockdown being issued on 6 January 2021 in England. Full restrictions were lifted on 19 July 2021. To date, many people continue to work from home. The impact of this has been a significant drop in carbon emissions for this period. Contractors were unable to deliver services on behalf of the council for several months during the reporting period. In addition, some larger assets such as Riverside Leisure Centre were closed for an extended period of time. Staff who usually work from council offices, such as City Hall, worked from home, and some were furloughed for a period of time, so we see reductions in all types of staff travel. We understand this is an extraordinary reporting period, and the level of drop in carbon emissions during 1 April 2020 to 31 March 2021 is unlikely to be replicated in future years. In fact, it's likely that we will see an increase in carbon emissions in the next year. The impact on the way the council delivers its services makes it difficult to meaningfully draw out other contributory factors. However, as with all long-range data sets, the long term trend gives the more accurate picture than singling out any one year.
- Fourth full year of the council's OFGEM certified Green Tariff for electricity supplied to all council assets. Since 1 October 2016 all the electricity supplied to council assets has been sourced from renewable sources. The reporting period of 1 April 2020 to 31 March 2021 includes a full year of green tariff reduction on electricity-related carbon emissions from council assets. This means that the council is only reporting the carbon emissions created

by the transmission element of our electricity supply, which is significantly lower than the factor applied to our electricity supply pre-green tariff.

- Following the switch to the green electricity tariff the impact of the ‘greening of the grid’ effect at a national level is less applicable to Norwich city council’s carbon footprint. However, it does continue to impact contractor’s electricity use and the transmission factor for the council’s assets. In relation to the ‘greening of the grid’ the Department of Business, Energy and Industrial Strategy (DBEIS) have stated; *“The UK electricity factor is prone to fluctuate from year to year as the fuel mix consumed in UK power stations (and auto-generators) and the proportion of net imported electricity changes. These annual changes can be large as the factor depends very heavily on the relative prices of coal and natural gas as well as fluctuations in peak demand and renewables.*
- At a grid level, the principal trend over time has been a move away from coal to renewable sources of electricity production. Over the decade 2008 to 2018, electricity generation from coal decreased from 124 TWh to 17 TWh, a decrease of 86%. Over the same period, electricity generation from renewable sources increased from 22 TWh to 111 TWh, an increase of 400%. (Source: DBEIS – Energy Trends, March 2019).
- *“In the 2019 GHG Conversion Factors, there was a 10% decrease in the UK electricity CO₂e factor compared to the previous year because there was a decrease in coal generation and an increase in renewable generation in 2017 (the inventory year for which the 2019 GHG Conversion Factor was derived). In this 2020 update, the CO₂e factor has decreased (compared with 2019) by 9%, again, due to a decrease in coal generation and an increase in renewable generation.”* (Source: DBEIS - UK Government GHG Conversion Factors for Company Reporting, June 2021)
- We expect this decrease in the UK electricity CO₂e factor to continue in future years, as the latest data from DBEIS states, *“Generation from renewable sources has been increasing year on year and in 2020 exceeded the generation from fossil fuels for the first time in the published data series. Renewable sources generated 134.3 TWh in 2020, an increase of 11 per cent. In contrast, generation from fossil fuels was down 14 per cent to 120.5 TWh.”* (Source: DBEIS – Energy Trends, March 2021)

Main emission increases:

- None this year, due to the impact of Covid-19 lockdown restrictions, as stated previously.

4. Measuring and reporting approach

All information is stored and processed in Microsoft Excel spreadsheets. Reporting will be on an annual basis, using the Defra/DECC method (based on GHG protocol). Internal reporting on carbon reduction targets will be using the NI 185 (Defra) method. The following scopes are included in the footprint:

Scope 1

Process emissions (owned buildings)

- Data obtained from utility bills (kWh)

Process emissions (contractor-operated buildings)

- Data obtained from contractor's energy records (kWh)

Fuel use (owned vehicles)

- Data obtained from fuel invoices (litres)

Scope 2

Electricity emissions (own buildings)

- Data obtained from utility bills (kWh)

Electricity emissions (contractor-operated buildings)

- Data obtained from contractor's energy records (kWh)

Scope 3

Business travel (grey fleet and contractor)

- Data taken from officer and member business mileage claim forms (km)
- Data taken from contractor business mileage records (km)

Public transport

- Data taken from officer and member business mileage claim forms (km)
- Data for train journeys taken from rail account invoices (km)

Fuel use in contractor vehicles

- Data obtained from contractor fuel records (litres)

5. Organisational boundary

The approach chosen to identify the operations we have collected data from was based on the original guidance for the National indicator 185, which stated that: *"The indicator is to include all CO₂ emissions from the delivery of local authority functions. It covers all an authority's own operations and outsourced services. Even if the services are being provided by an external body (e.g. a private company) they remain the function of the authority... the definition of a local authority's function includes outsourced services (e.g. a private company, third sector organisation), as they remain a function of the authority. CO₂ emissions arising from the buildings and transported related to these outsourced services should be measured and included in the authorities return."*

Following an assessment of the main outsourced services associated with the council's functions, leisure centres, street services and housing support services were included.

6. Operational scopes and emissions – net emissions (Green Tariff reductions applied to council asset electricity use)

Scope 1 - Direct emissions (e.g. onsite fuel consumption; gas/vehicles)		CO ₂ (kg)	Exclusions and %
Gas from buildings (council) – kwh		2,211,018	n/a
Gas from buildings (contractors) – kwh		18,823	n/a
Fuel in fleet vehicles (council) - km diesel		330	n/a
Fuel in fleet vehicles (council) – km petrol		1,237	
TOTAL SCOPE 1		2,231,408	n/a
Scope 2 - Energy Indirect		CO ₂ (kg)	Exclusions and %
Electricity in buildings (council) – kWh		124,460	n/a
Electricity in buildings (contractor) – kWh		62,697	n/a
TOTAL SCOPE 2		187,157	n/a
Scope 3 - Other indirect (e.g. business travel)		CO ₂ (kg)	Exclusions and %
Grey fleet eg private cars		4,231	n/a
Taxis		436	n/a
Flights		0	n/a
Trains		259	n/a
Contractors vehicle use		654,394	n/a
TOTAL SCOPE 3		659,320	n/a
Grand total net (CO₂ (kg))			
		3,077,885	

7. Geographical breakdown

All operations occur within the city council boundary except for contractor/staff transport related activities.

8. Base year

The base year for emissions is January to December 2007.

9. Target

The target for reduction in overall (i.e. all scopes) CO₂ emissions was re-set in 2020. The new target is for Norwich City Council to be net zero for carbon by 2030. This is in recognition of the global climate emergency, and builds up our success of achieving 59.6% carbon emissions reduction from the period 2008 to 2019.

This target will be measured using the emissions factors required for reporting on the old National Indicator 185.

10. Intensity measurement

No intensity measurement has been used, as this is generally more relevant for private sector businesses who wish to compare CO₂/turnover.

11. External assurance statement

PWC audit carried out in 2009. The process was considered to be sound.

12. Carbon offsetting

No carbon offsetting was undertaken during this reporting period.

3. Green tariffs

In October 2016 Norwich City Council switched its electricity supply to a 100% Renewable Energy Tariff which meets stringent OFGEM Green Supply Guidelines and enables the council to claim the CO₂ reduction for our electricity consumption. Carbon emissions associated with the transmission and distribution of this electricity is included in net carbon emissions calculations.

14. Electricity generation

144 solar photovoltaic (pv) panels were installed on the roof of City Hall in March 2012. Unfortunately, due to Covid-19 restrictions it was not possible to access the kWh information for this report. However, based on an average of the previous 7 years data, we project that the panels may have produced 26,479 kWh of electricity during the reporting period.

A solar PV array, on the roof of Rose Lane car park, became operational at the end of December 2018, and is now contributing to offsetting the electricity use at this asset. Again, due to restrictions imposed by Covid-19, we were unable to access these panels. Unfortunately, we do not have sufficient data to accurately project how much electricity (kWh) was produced from this array. Assuming the array was fully operational during the reporting period, it does not seem unreasonable to suppose that it would be more than double the 5,100kWh reported during the 5 operational months of the previous period. So, we project it will be at least 10,200 kWh for the period 1 April 2020 to 31 March 2021.

As soon as it is possible to safely do so, we will retrieve the accurate pv panel data and update these figures accordingly.

15. Heat generation

There was no heat generation from owned or controlled sources.

16. Opportunities in 2021-22

We are due to publish the third phase of the council's Carbon Management Plan later this year. The plan will detail opportunities across our portfolio of assets, where we can further reduce energy consumption. The reduction of emissions created during this reporting period, has enabled the council to consider different ways of working, and these will also inform the context in which the forthcoming Carbon Management Programme will be produced. (New hybrid working model and the possible change in use of some aspects of City Hall)

As part of this programme of work, we will be working with contractors to support them to reduce carbon emissions. One contractor has already switched electricity use to a Green Tariff from 1 April 2021, and is trialling electric vehicles for their contract with Norwich city council. They anticipate switching to a Peugeot E Expert van on our contract from September/October 2021, dependent on delivery times.

In 2020 we published the council's 2020-2025 Environmental Strategy which further details our ambitious plans to reduce both the council's and the city's carbon emissions over this period. We continue to monitor progress made against the objectives in the strategy on a 6 monthly cycle.

The environmental landscape continues to change at pace, along with the impacts of Covid-19. This, together with the recent Intergovernmental Panel on Climate Change report, the upcoming COP26, a new Norwich Climate Commission and the future Environment Act, requires us to regularly reflect and review our approach to tackling the climate and environmental emergency. Therefore, the council is undertaking a comprehensive assessment, across all service areas, of our response to the climate and environmental emergency and the wider sustainability agenda. The intention is to identify actions already taken, where further action is required, to consider the costs and benefits of new proposals, and develop a clear plan for future work across this agenda which sets out the council's climate change and sustainability commitment.

A copy of our current environmental strategy can be found at:

https://www.norwich.gov.uk/info/20195/council_policies_and_strategies/3606/environmental_strategy_2020-25/7

On completion of this reporting period, a 71.1% carbon emissions reduction has been achieved, against a 2007/08 baseline.

As discussed, carbon emissions produced during this reporting period have been significantly impacted by the Covid-19 lockdown restrictions. And we might expect to see an increase in carbon emissions in future before further reductions are achieved through our continuing programme of carbon emissions reduction. The more accurate picture is to be found in the long-term trends, rather than individual annual data points.

In order to reduce carbon emissions still further in future years, we continue to seek opportunities to reduce our kWh use of both electricity and gas across council's assets. We work closely with our asset management team and have employed additional resources to help profile areas of highest energy use across our estate, with a view to implementing technologies which maximise the

opportunity to reduce energy consumption. We also recognise the need to work closely with our major contractors in order to continue to reduce their fuel use, whilst delivering council contracts.

Having successfully reduced our emissions over a thirteen year period, it is becoming increasingly challenging to continue to reduce carbon emissions each year, particularly in straitened economic times. However, in the year 2021-2022 we have plans to implement the following projects which are fully or partly-funded by Salix loans:

- Installing Solar PV at the new depot
- Installing EV chargers for fleet use
- New energy efficient servers
- Installing efficient gas boilers at City Hall.
- Further LED retrofitting at the halls
- Further LED retrofitting in landlord lighting/ parks
- Continued development of renewables and battery storage.

We will continue to support our carbon emissions reduction programme by utilising carbon offsetting, where appropriate, to enable us to achieve our target of net zero for carbon emissions by 2030.



Committee Name: Climate and environment emergency executive panel

Committee Date: 19/10/2021

Report Title: Retrofitting Work in Norwich

Portfolio: Councillor Hampton, Cabinet member for climate change and digital inclusion

Report from: Head of strategy and transformation

Wards: All Wards

OPEN PUBLIC ITEM

Purpose

To give an overview of the retrofitting funding being accessed by the council in 2021/2022.

Recommendation:

It is recommended that the committee note the work being done on retrofitting in Norwich

Policy Framework

The Council has three corporate priorities, which are:

- People living well
- Great neighbourhoods, housing and environment
- Inclusive economy

This report meets the Great neighbourhoods, housing and environment corporate priority

This report addresses 'Improve the quality and safety of private sector housing' strategic action in the Corporate Plan

This report helps to meet the housing, regeneration and development objective of the COVID-19 Recovery Plan

Report Details

1. As a council we recognise that retrofitting existing homes is one of the key ways carbon emissions can be reduced in housing.
2. Heating and hot water for UK homes make up 25% of total energy use and 15% of greenhouse gas emissions. In Norwich the domestic sphere makes up 38% of our carbon emissions. Although this is broader than just heating and hot water, we know that space heating is profoundly influenced by outside temperature, and a well-insulated home has a much lower energy need.
3. Improving housing in the city is a key strategic action in both our Corporate Plan and Environmental Strategy and forms part of our ambitious net zero target.
4. As a key provider of housing in the city we have a substantial ongoing programme of investment in our own housing stock which includes investment in fabric insulation, new windows and doors. Although, regrettably, with the removal of grant assisted funding less homes have been able to benefit from the installation of loft and cavity wall insulation, boilers and controls and external wall insulation.
5. Looking further afield central government currently aim to upgrade as many fuel poor homes as is reasonably practicable to EPC Band C by the end of 2030.
6. However, only around 30% of homes in the UK overall, fuel poor or not, currently meet EPC band C.
7. We have estimated that, if we were to retrofit all homes below C in Norwich with just wall and loft insulation, this would cost £295 - £511 million in total. Energiesprong, a whole house approach which would deliver far higher energy savings, would cost £1.5 million million with a 40 year payback. Solar PV systems on all eligible homes would cost £238 million with a 17 – 24 year payback.
8. Overall the Committee on Fuel Poverty estimates there is a funding gap of £17.1 billion to meet the 2030 target.
9. Furthermore, at the current rate of installation, the charity National Energy Action has estimated it will take 96 years to properly insulate all the current fuel poor homes in the UK. Installation of loft and wall insulation is at just 5% of peak market delivery in 2012.
10. Clearly central government ambition is not matched by the funding made available to local government.
11. The lack of long term funding acts as one of the major barriers to retrofitting. Without a long term commitment many schemes have to focus on individual measures rather than a whole house approach which can deliver higher savings. It also harms the long term sustainability of local supply chains as

installers are reluctant to hire and train new members of staff, just to have to lose them once funding ends.

12. Nevertheless, as an authority, we continue to take advantage of as much funding as we can to help improve the housing stock in the city.
13. Over recent weeks we have also seen energy prices rise rapidly, hitting a ten year high, which will impact both those in fuel poverty and energy inefficient homes the hardest. 1.9 million homes have had their energy suppliers go bust this year. COVID – 19 and Brexit also continue to have an impact, particularly in driving up both the scarcity and prices of manufacturing materials.
14. Norwich City Council has a strong history of investing in their stock, with our council housing having an average SAP rating of 70.9 (EPC Band C), which is much higher than both the national average and the private stock in Norwich.
15. Our investment portfolio includes renewable technologies in our stock, as outlined below:

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.

16. Additionally Norwich City Council has committed to installing a Water Source Heat Pump System (WSHP) at Barnards Yard, which will utilise water as a renewable energy source by deriving heat from the adjacent River Wensum. The new system will provide space and hot water heating to 85 dwellings from this renewable source. This will replace a natural gas based heating system. The new system will be electrically powered and all electricity used on this development will be generated from a renewable source via our ESPO energy procurement. This system is expected to produce 4.71Kw's of heat for every 1Kw of electricity purchased and will therefore provide significant reductions in CO2 emissions per annum. Compared to the existing gas fired system it is anticipated that annually 270 tonnes approx of carbon will not be emitted into the atmosphere - which equates to the work 12,857 fully grown trees would absorb every year. Overall this scheme equates to almost 150,000 m3 of carbon reduction per annum.

17. In 2010 our housing stock achieved the decent homes standard and we have independently developed the Norwich Standard – 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.
18. While being mindful of the challenging financial landscape we also have a robust programme of investment planned for housing stock in the city, having invested £129 million over the past six years. Our current HRA capital programme contains an £18.5 million commitment to maintaining and improving the condition of existing housing and £8.7 million to improve the use and management of existing stock, including improvements to communal areas and 790 new heating systems.
19. Improvement in the private sector will be key to realising improved carbon and fuel poverty reductions in the future – however this sector has seen significant cuts in government funding.
20. We have applied to a number of funding streams focused on retrofitting and improving energy efficiency in the city.
21. Overall, it represents over £4 million in potential funding for retrofitting and will save over 30,000 kg CO₂e in carbon due to improved energy efficiency of properties.
22. This includes both private sector and social stock improvements. Although our social stock is relatively well insulated, particularly when compared to the private sector, we still seek to take advantage of as many funding sources as possible.
23. We also continue to utilise other external sources of funding such as ECO, via our Cosy City programme: <http://www.cosycity.co.uk>. This helps eligible households access funding, mainly for loft and cavity wall insulation.

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

24. Norwich City Council became one of the first councils to ever run a collective solar scheme in May 2015 – installing nearly 8,000 panels through this scheme.

25. Furthermore the influence of this scheme meant more people were encouraged to invest in solar for their properties, even if they didn't join with Solar Together, with data showing an upturn in solar pv installations in September 2015.
26. Further schemes were held to help residents take advantage of the FIT scheme before it ended and another after the FIT scheme ended, which, for the first time, was able to offer battery storage to residents, with 1/3rd saving on the market price. Despite the FIT scheme ending, and our most recent scheme being impacted by COVID, we were still able to engage local residents and increase the amount of solar panels in the city.
27. Overall the scheme has invested £2.1 million in Norfolk and avoided 1,800 tonnes of CO2 by installing over 2 MW of power in the city of Norwich alone. Over 2,000 people have signed up to this scheme over the four auctions.
28. Furthermore, we worked with the Warm Home Fund to install over £1 million in improvements to properties at the Templemere estate, including significant amounts of loft and cavity wall insulation.
29. Please see below an overview of the funding we have bid for:

Category	Amount	Notes
Green Home Grants – Local Authority Delivery	£775,000	Currently delivering until end March 2022. Mix of private and social housing.
Public Sector Decarbonisation Scheme	£750,000	Has been used for the depot and City Hall retrofitting
Off gas funding (Templemere)	£1.1 million (£322,000 in new heating systems, £800,000 in mains gas installations)	Via the Warm Homes Fund partnership which we are part of.
ECO spend (previous 12 months)	£385,290	External grant to private homeowners facilitated by NCC. Mainly focused on loft and cavity wall insulation
Sustainable Warmth Competition	Approximately £2.8 million	Focused on improving low energy efficiency fuel poor homes. We are awaiting the outcome of our bid.
Social Housing Decarbonisation Fund	TBC	Specifically focused on social housing and we are hoping to deliver EWI and Wimpey homes. Currently in the bid writing process.

Financial and Resources

Any decision to reduce or increase resources or alternatively increase income must be made within the context of the council's stated priorities, as set out in its Corporate Plan 2019-22 and Budget.

1. There are no proposals in this report that would reduce or increase resource
2. All works are either externally funded or have already been budgeted in the HRA

Legal

3. Legal advice is always sought before any bid paperwork is completed and we ensure they meet all legal considerations and requirements

Statutory Considerations

Consideration	Details of any implications and proposed measures to address:
Equality and Diversity	N/A
Health, Social and Economic Impact	Retrofitting homes can help reduce fuel poverty in the city. Fuel poverty has many negative consequences - cold can exacerbate underlying health conditions such as respiratory and cardiovascular problems. Children who are living in cold homes are significantly more likely to suffer from chest problems, asthma and bronchitis. 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.
Crime and Disorder	N/A
Children and Adults Safeguarding	N/A
Environmental Impact	Retrofitting houses is key to reducing carbon emissions from the private sector stock in Norwich.

Reasons for the decision/recommendation

4. To note the work being done on retrofitting in the city, particularly in the light of recent fuel price rises.

Appendices: N/A

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