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MANCHESTER CITY COUNCIL

Environment and Climate Change Scrutiny Committee

Date: Thursday, 14 October 2021
Time: 10.00 am
Venue: Council Chamber, Level 2, Town Hall Extension

Everyone is welcome to attend this committee meeting.

There will be a private meeting for Members of the Committee at 9.30 am in the Council Chamber.

Access to the Public Gallery

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Membership of the Environment and Climate Change Scrutiny Committee

Councillors - Chohan, Flanagan, Foley, Hassan, Holt, Hughes, Igbon (Chair), Jeavons, Lynch, Lyons, Razaq, Sadler, Shilton Godwin and Wright

Agenda

1. Urgent Business
To consider any items which the Chair has agreed to have submitted as urgent.

2. Appeals
To consider any appeals from the public against refusal to allow inspection of background documents and/or the inclusion of items in the confidential part of the agenda.

3. Interests
To allow Members an opportunity to declare any personal, prejudicial or disclosable pecuniary interest they might have in any items which appear on this agenda; and [b] record any items from which they are precluded from voting as a result of Council Tax/Council rent arrears. Members with a personal interest should declare that interest at the start of the item under consideration. If members also have a prejudicial or disclosable pecuniary interest they must withdraw from the meeting during the consideration of the item.

4. Minutes — Pages 5 - 12
To approve as a correct record the minutes of the meeting held on 9 September 2021.

5. Waste, Recycling and Street Cleansing Update — Pages 13 - 52
Report of Strategic Director (Neighbourhoods)

This report provides an update on progress in delivering waste, recycling, and street cleansing services. Describing how the activity contributes to the climate change agenda and key priorities for future. Including an update on the English Resources and Waste Strategy (2018).

6. Climate Change Action Plan - Quarterly Update report — Pages 53 - 70
Report of the Deputy Chief Executive and City Treasurer

This report provides a progress update on delivery of the Council's Climate Change Action Plan for Quarter 2 2021-22 (July-September 2021).

7. Manchester Climate Change Framework and Implementation Plan 2.0 - Consultation Two Outcomes — Pages 71 - 96
Report of the Manchester Climate Change Agency

This report provides an update to the Committee on progress in developing an updated Climate Change Framework for the city (Framework 2.0). It reviews the responses to the first round of consultation with communities and businesses that will help to

inform the Framework and summarises the emerging objectives and proposed actions required to deliver the scale of carbon reduction required across the city. The Framework is intended to provide a more detailed definition of the urgent actions required across the city if Manchester is to remain within its adopted carbon budget and remain on track to be a zero-carbon city by 2038 at the latest.

8. Large Scale Renewable Energy Generation Feasibility Study Pages
Report of the Deputy Chief Executive and City Treasurer 97 - 188

The Council's Climate Change Action Plan (CCAP) has a target to reduce direct emissions of CO2 by 50% over the five-year period of 2020-25. In addition, the Council has a target to be zero carbon by 2038.

Action 1.4 of the CCAP targets 7,000 tonnes of annual CO_2 by 2025 savings to be delivered via a **"**feasibility and business case for a large-scale energy generation scheme from large scale Solar PV or Onshore or Offshore Wind on Council land and buildings, or sites in third party ownership".

Local Partnerships were appointed in November 2020 to deliver the feasibility study and their study, "Feasibility Study and Options Appraisal for Large Scale Energy Generation for Manchester City Council", was completed in April 2021 and is attached as Appendix 1 to this paper.

The Feasibility Study concluded that the Council has two options: either purchase a solar PV facility or negotiate a suitable power purchase agreement (PPA). Both options were assessed to be better than the "do nothing" option.

The Committee are invited to comment on the report prior to it being considered by Executive.

9. Overview Report Pages
Report of the Governance and Scrutiny Support Unit 189 - 196

This is a monthly report, which includes the recommendations monitor, relevant key decisions, the Committee's work programme and any items for information.

Information about the Committee

Scrutiny Committees represent the interests of local people about important issues that affect them. They look at how the decisions, policies and services of the Council and other key public agencies impact on the city and its residents. Scrutiny Committees do not take decisions but can make recommendations to decision-makers about how they are delivering the Manchester Strategy, an agreed vision for a better Manchester that is shared by public agencies across the city.

The Environment and Climate Change Scrutiny Committee areas of interest include The Climate Change Strategy, Waste, Carbon Emissions, Neighbourhood Working, Flood Management, Planning policy and related enforcement and Parks and Green Spaces.

The Council wants to consult people as fully as possible before making decisions that affect them. Members of the public do not have a right to speak at meetings but may do so if invited by the Chair. If you have a special interest in an item on the agenda and want to speak, tell the Committee Officer, who will pass on your request to the Chair. Groups of people will usually be asked to nominate a spokesperson. The Council wants its meetings to be as open as possible but occasionally there will be some confidential business. Brief reasons for confidentiality will be shown on the agenda sheet.

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Smoking is not allowed in Council buildings.

Joanne Roney OBE
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Further Information

For help, advice and information about this meeting please contact the Committee Officer:

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This agenda was issued on **Wednesday 6 October 2021** by the Governance and Scrutiny Support Unit, Manchester City Council, Level 3, Town Hall Extension , Manchester M60 2LA

Environment and Climate Change Scrutiny Committee

Minutes of the meeting held on 9 September 2021

Present:
Councillor Igbon – in the Chair
Councillors Foley, Hassan, Holt, Jeavons, Razaq, Sadler, Shilton Godwin and Wright

Apologies: Councillors Chohan, Flanagan, Hughes, Lynch and Lyons

Also present:
Councillor Rawlins, Executive Member for Environment
Tom Flanagan, Interim Director, Manchester Climate Change Agency
Simon Curtis, Chair, Manchester Arts and Sustainability Team

ECCSC/21/14 Minutes

Decision

To approve the minutes of the meeting held on 22 July 2021 as a correct record.

ECCSC/21/15 Climate Change Action Plan Annual Report 2020-21 and Work Programme 2021-22

The Committee considered a joint report of the Deputy Chief Executive and City Treasurer that provided an update on the progress that had been made in delivering the Climate Change Action Plan (CCAP) during the first full financial year (CCAP Annual Report 2020-21) and the work programme for the second financial year of the Action Plan (CCAP Work Programme 2021-22).

Key points and themes in the report included:

- A five-year CCAP covering 2020-25 was approved at Executive in March 2020;
- Updates had been considered by Strategic Management Team and the former Neighbourhoods and Environment Scrutiny Committee throughout the CCAP's first year, with a detailed progress report considered in February 2021;
- This Annual Report brought together the CCAP updates provided over the last 12 months, a full year of CO2 emissions data and highlighted the progress which had been made during this time;
- Overall, the Council's direct emissions had reduced by 21% (-6,783 tonnes CO2) compared to 2019-20 and against an annual target to reduce emissions by 13%. For 2021-22, the Council's carbon budget was 27,056 tonnes CO2, 13% lower than for 2020-21;
- The Work Programme for 2021-22, outlined the key CCAP actions, or critical milestones within complex CCAP actions spanning multiple years, which were to be delivered during this period and these were listed under the five themes (Buildings & Energy, Transport & Travel, Reducing consumption based emissions, Climate adaptation, and Catalysing change); and

- The work programme took account of a small number of actions that were delayed last year due to the pandemic and incorporated milestones for new projects, such as the Public Sector Decarbonisation Scheme, the Social Housing Decarbonisation Fund and the 'In Our Nature' communities programme. None of these projects had featured in the original CCAP 2020-25.

The Committee was invited to comment on the report prior to it being considered by Executive.

Some of the key points that arose from the Committee's discussions were: -

- The need to reiterate the urgency and immediacy of the climate emergency;
- Questioning that if we accepted that climate change was such an important and immediate issue why were some targets listed as still 'to be confirmed' in relation to projected CO2 emissions reductions;
- An update was sought on the Local Authority Green Homes Grant;
- Questioning the capacity and ability of the Manchester Climate Change Agency (MCCA) to lead and deliver on such an important issue for the city;
- Commenting that the Council contained the capacity and leadership to deliver the ambitions of the MCCA;
- More information was sought on the task-and-finish sub-group that had been convened to ensure the new organisational and governance structures of the MCCA were fit for purpose;
- Noting that the Council's own emissions had reduced more than the minimum target and that it was important to continue on this trajectory and all levers should be used to influence partners and organisations across the city to address their own carbon emissions;
- More needed to be done to improve and deliver green public transport; active travel and measures to address the emissions from domestic properties across all tenures;
- Consideration needed to be given to creating a local bank/bond scheme to support green investments;
- An explanation was sought as to the reported spike in emissions in 2015 attributed to Biffa;
- An update on the sustainable travel policy for Officers and Members was requested;
- An update on the activities to address emissions associated with aviation was requested;
- More information was requested on the Manchester Food Board;
- Would Manchester be represented at *COP26*, the international meeting to discuss global action on climate change;
- Could the Civic Quarter Heat Network supply domestic properties;
- How were the emissions generated from Northwards properties accounted for now that these had been brought back in house;

The Strategic Lead - Policy and Partnerships informed Members that the spike in emissions attributed to Biffa in 2015 was as a result of the change in the contract at that time which moved street sweeper vehicles from the Council's fleet to Biffa and was mirrored by a decrease in emissions in MCC's operational fleet at the same time.

He further commented that the impact of the new electric refuse collection vehicles within the fleet were yet to be realised but would be captured and reported.

The Strategic Lead - Policy and Partnerships noted the comment from the Committee regarding the need to continue with the trajectory of reducing the Council's emissions. He said this was understood and in response to the question regarding the targets that were listed as 'to be confirmed', he stated that this only applied to those projects where CO2 savings could not currently be quantified. He further confirmed that the sustainable travel policy for Officers and Members was still being progressed and updates would be provided at the appropriate time. In response to the question regarding aviation emissions he advised that the Committee would be receiving a substantive report on this item at the December meeting.

The Strategic Lead - Policy and Partnerships acknowledged the challenge and scale of retrofitting domestic properties, however modelling work had been undertaken across Greater Manchester (GM) and that evidence would inform the submission to central government as part of the Spending Review Submission. He further acknowledged the suggestion regarding the bond scheme and stated this would be taken away for consideration.

The Strategic Lead - Policy and Partnerships stated that the Climate Change Action Plan was designed to be clear and transparent, and he assured Members that the Zero Carbon Co-ordination Group met monthly to review the plan. He added that this would include discussions on the best way of reporting emissions from Northwards and their properties. He stated that it was important to have a pipeline of projects scheduled to continue to deliver the reduction in emissions. With reference to the question related to the Civic Quarter Heat Network he confirmed that this was not available to domestic properties, however the Zero Carbon Manager advised that work was underway at a GM level to consider the options to address domestic energy supply, adding that currently the production and supply of hydrogen is not sufficient to support large scale adoption of hydrogen boilers Nfor domestic properties. In response to the discussion on the provision of energy she suggested that a report on the Local Energy Area Plan developed by the Energy Systems Catapult could be provided to the Committee for consideration at a future meeting.

The Strategic Lead - Policy and Partnerships stated that Manchester was working in collaboration with the other Core Cities to ensure there was a presence at COP26. He advised that a piece of work was underway to better articulate and communicate the Council's actions on climate change and that this would be included in the Council's website ahead of COP26.

The Executive Member for Environment referred to the Green Homes Grant and noted that lessons would be learnt to improve the take up rate of any future grant schemes. She said that a strategy would be developed with the Communications Team to ensure the correct message were directed at residents to maximise the take up.

The Executive Member for Environment stated that ongoing impact of austerity and budget cuts and the subsequent impact on Council staff numbers meant that the Council did not have the capacity to deliver the work and ambitions of the MCCA.

She stated that the benefits of a partnership model was demonstrated by the bringing together of a wealth of knowledge and resources across the city.

The Chair informed the Committee that a report on Food Sustainability would be scheduled for the Committee's January 2022 meeting and this would include information on the Manchester Food Board.

Decisions

The Committee:-

1. Endorse the recommendation that the Executive note the contents of the report, the progress that has been made in delivering the Action Plan during the first year (CCAP Annual Report 2020-21) and the work programme for the second year of the Action Plan (CCAP Work Programme 2021-22).

2. Agree that the Chair convenes a meeting with the Executive Member for Environment to discuss the concerns raised by Members regarding the Manchester Climate Change Agency.

3. Recommend that a report on the options to be considered relating to the provision of energy for domestic properties is included on the Committee's Work Programme.

ECCSC/21/16 Manchester Climate Change Agency Progress Report 2021/22

The Committee considered a joint report and presentation of the Interim Director and the Interim Policy and Strategy Advisor, Manchester Climate Change Agency that provided a progress update to the Committee on the Climate Change Agency's achievements to date during the year and reviewed work in progress.

Key points and themes in the report included:

- Providing reasons for delaying publication of the Manchester Climate Change Partnership's Annual Report until September;
- Describing the context of the Manchester Climate Change Framework 2020-25 and it's four headline objectives and the six priority areas for action;
- A narrative that described Partnership and Agency Progress 2021/22;
- Citywide Progress 2020/21, including aviation;
- Describing the rationale for developing Version 2.0 of the Framework for 2020-25, noting that Manchester was one of the first cities to adopt science-based carbon budgeting; and
- An update on National Policy and Local & National Government Joint-working.

The Committee also received a presentation from Simon Curtis, Chair, Manchester Arts and Sustainability Team that discussed the relationship between the arts and culture and climate change and how culture could engage with citizens on this issue to influence change.

Some of the key points that arose from the Committee's discussions were: -

- Action needed to be taken to reduce the demand on aviation, adding that technology alone was not the solution to reducing emissions from the aviation industry;
- The need for the Council to take the moral lead on the issue so as to inspire and influence change;
- Noting the importance and impact of Carbon Literacy Training, and that this should be delivered to all residents;
- Everyone needed to take responsibility for their own emissions, in particular in regard to the issue of consumption, especially in relation to clothing;
- A list of all organisations in Manchester of those that had signed up to the MCCA and a list of all those that had not, and where available the reasons for not signing up to be provided;
- Consideration needed to be given as to how targets and outcomes were reported, adding that this should be similar to the format of the Manchester Climate Change Action Plan;
- A report was required that evaluated whether the City Council was achieving value for money for its investment into the MCCA;
- Recognising the need to increase capacity within MCCA to influence and deliver this programme;
- The impact of poverty and emissions, noting that economically disadvantaged residents often did not own a vehicle or take flights; and
- Did the MCCA lobby the Government for funding to deliver schemes such as solar panels for schools and hospitals.

The Interim Director MCCA stated that it was important to recognise that the MCCA was not responsible for the targets but rather a body to coordinate all action plans of partners across the city. He reiterated the point that it was the responsibility of every organisation and individual to consider and take action to address their carbon emissions.

The Interim Director MCCA advised that MCCA did work with other cities to consider challenges at scale, such as the issue of aviation emissions as this provided an opportunity to share knowledge and best practice. He further acknowledged the comment regarding consumption and stated that it was an opportunity for organisations to challenge themselves through their own procurement process and supply chains. With reference to the list of organisations requested he stated that this could be provided following the meeting.

The Interim Director MCCA further advised that they did work with other Core Cities to lobby the Government for additional resources to fund initiatives and projects to reduce carbon emissions.

The Chair commented that she noted the Members comments regarding the format of the reports submitted by MCCA to the Committee, including the delivery of presentations at meetings. She said she would liaise with the Executive Member to discuss this further.

The Executive Member for Environment stated she acknowledged the comments regarding Carbon Literacy Training and said that there were good examples of how this could be delivered locally, and she would share good practice with Members for them to consider how this could be applied to their respective wards.

Decision

To note the report.

ECCSC/21/17 Planning and Its Contribution To Address Climate Change

The Committee considered the report of the Director of Planning, Building Control and Licensing that described how the planning policy and process was used to influence and address climate change, including an update on the Local Plan, describing the policy in relation to developer requirements to provide electric vehicle charging points and cycle storage facilities, and the approach to Environmental Impact Assessments.

Key points and themes in the report included:

- Providing a background and overview of the planning policy framework, including the Core Strategy.
- An update on the Local Plan and the opportunities of the Local Plan refresh;
- The policy in relation to developer requirements to provide electric vehicle charging points and cycle storage facilities;
- The approach to Environmental Impact Assessments; and
- Conclusion and next steps.

Some of the key points that arose from the Committee's discussions were: -

- Planning policy and decisions were a significant lever at the disposal of the Council and should be used to maximise environmental improvements and address carbon emissions;
- Nothing in the city should be built that adversely affects the environment;
- All developments should support active travel by providing bike storage space and support the Council's ambition to reduce reliance on cars;
- Construction Management Plans should also be used to maximise environmental benefits, including the impact on noise pollution;
- Could Energy Reduction Targets be imposed following the completion of a development;
- There was no reference within the report to protecting existing bio diversity;
- Permitted development on domestic buildings needed to monitored to ensure they were not adding to emissions; and
- Consideration needed to be given to addressing urban heat islands that occurred when cities replaced natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorbed and retained heat.

The Head of Environment, Planning and Infrastructure informed the Committee that the Local Plan was one of a suite of strategies and he made reference to the Green

and Blue Strategy and the policies at both a Manchester level and GM level to address issues relating to transport and active travel.

The Planning Section Manager advised that the Environmental Impact Assessment considers a range of issues including the energy efficiency of the development, bio diversity, tree planting, drainage and highways. He commented that all applications were assessed and considered using existing national guidance and local policy and developers were always challenged to increase their contribution to reducing the developments' environmental impact, particularly in relation as to how they sourced their materials.

In response to the comments made regarding the monitoring of Construction Management Plans, the Planning Section Manager advised that if issues did occur there were a range of teams within the Council who would respond to these, and where necessary take enforcement action. He said that if a Construction Management Plan was not available at the application stage due to a contractor not being identified this would be stipulated as a condition of any consent granted.

The Planning Section Manager noted the comment made regarding permitted developments and stated that planning permission was not required for these, which in effect reduced the control the planning department had on such projects.

In response to the comment made regarding Heat Islands, the Planning and Infrastructure Manager advised that a piece of bespoke work had been commissioned to consider the open space across the city which would support work on the Local Plan refresh.

The Chair stated that every opportunity should be taken to increase green spaces and planting in the city so as to support and encourage bio diversity. She further suggested that a point of contact should be created so that developers could obtain advice on the type of tree and the best locations they should be planting them so as to maximise their impact.

Decision

To note the report.

ECCSC/21/18 Overview Report

The report of the Governance and Scrutiny Support Unit which contained key decisions within the Committee's remit and responses to previous recommendations was submitted for comment. Members were also invited to agree the Committee's future work programme.

Decision

The Committee note the report and agree the work programme.

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Manchester City Council
Report for Information

Report to: Environment and Climate Change Scrutiny Committee – 14 October 2021

Subject: Waste, Recycling and Street Cleansing Update

Report of: Strategic Director (Neighbourhoods)

Summary

This report provides an update on progress in delivering waste, recycling, and street cleansing services. Describing how the activity contributes to the climate change agenda and key priorities for future. Including an update on the English Resources and Waste Strategy (2018).

Recommendations

That Members note and comment on the report.

Wards Affected: All

Environmental Impact Assessment - the impact of the issues addressed in this report on achieving the zero-carbon target for the city
By recycling more and wasting less – all Mancunians can contribute towards achieving the zero-carbon target. Replacement of 27 bin collection vehicles in 2021/22 will contribute towards achievement of the Councils carbon reduction plan.

Manchester Strategy outcomes	**Summary of how this report aligns to the OMS**
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	Supporting residents and businesses to dispose of their waste responsibly and compliantly will support progress towards becoming a sustainable city.
A highly skilled city: world class and home-grown talent sustaining the city's economic success	The support provided to businesses enables businesses to grow and thrive in Manchester.
A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	Working closely with both residents and businesses to support them in improving the neighbourhoods in which they live, work and socialise.
A liveable and low carbon city: a destination of choice to live, visit, work	Increasing recycling rates across the city will reduce Manchester's carbon footprint. Reducing litter will make the city cleaner.

A connected city: world class infrastructure and connectivity to drive growth	Reducing litter and fly tipping will reduce its impact on the city's infrastructure.

Contact Officers:

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

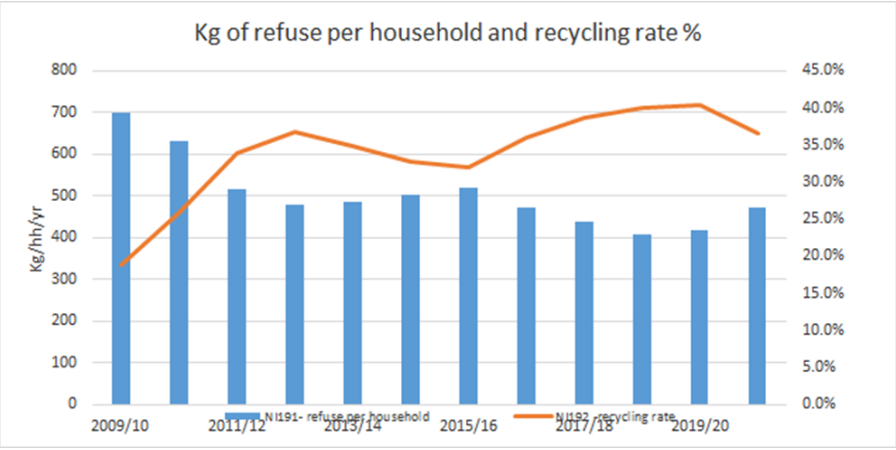
'Our Waste, Our Resources: A Strategy for England' (2018), DEFRA
The Litter Strategy for England, (2017), DEFRA

1.0 Introduction

1.1 The Waste, Recycling and Street Cleansing Team sits within the wider Operations and Commissioning Service and is responsible for managing the waste and street cleansing collection contract with Biffa, overseeing waste disposal arrangements, service improvement projects and co-ordination of the 'Keep Manchester Tidy' project. The team works together with the wider neighbourhood services, in particular Neighbourhood Teams and Neighbourhood Compliance Teams to deliver priorities for neighbourhoods.

1.2 The impact of the COVID-19 pandemic and Brexit has had numerous impacts on the management of waste collection and cleansing services for all Local Authorities (LAs) in the UK. Like many sectors, the availability of staff to provide essential services has been impacted by COVID-19 absence and laterally the availability of HGV drivers. This has been exasperated by the impact of Brexit and other global issues which are impacting availability of staff and the supply chain for vehicles and bin supplies. Societal changes have also led to changes in waste behaviours.

1.3 The pandemic has led to increases in household waste in the city, which is reflected at a national level where recycling rates reduced on average by 3.5% (Defra, 2021). Manchester's recycling rate fell from 40.4% in 2019/20 to 36.6% in 2020/21 as shown in the graph below. Whilst refuse levels have now started to reduce, it remains unclear what the new baseline will be. Significant shifts in behaviour, such as increased home working, is likely to change this. However, waste compositional analysis undertaken in 2019, shows there is still significant opportunity to divert more recycling and food waste from refuse bins.



1.4 By recycling more and wasting less, all residents can contribute towards achieving the city's target to become zero-carbon by 2038. According to WRAP (2021) 18 million tonnes of CO2 are saved a year by recycling, the same environmental impact as taking 12 million cars off the road. As part of the Councils commitment to reduce its carbon footprint and improve air quality, almost half of the end-of-life waste and recycling diesel trucks will be replaced during 2021/22 with electric trucks.

1.5 The English Resources and Waste Strategy (2018) will re-shape the country's approach to managing resources towards a circular economy. In summer 2021 the second round of consultations on the strategy took place, and it is hoped a clear indication will be provided by the end of 2021/22. In the future the government may require all LAs to collect a consistent set of recycling materials which will include plastic pots, tubs, and trays. It will also include the introduction of a deposit return scheme, which may include plastic bottles, glass bottles and cans. This will not only ensure more material is recycled but will reduce the littering of these items.

1.6 The Litter Strategy for England (2017), set out the governments ambition to reduce the impact of littering on all aspects of the environment. A significant aim of the strategy is to affect a widescale behaviour change to address the nations littering habits. In 2018 the city embarked on a partnership with Keep Britain Tidy to develop an overarching campaign: Keep Manchester Tidy (KMT). Campaigns have been developed to encourage residents, businesses, and visitors to do their bit and deliver interventions for the various types of litter issues experienced across the City. Additional investment in bin infrastructure, fly tip prevention and intervention measures will build resilience for improvements to be made.

1.7 Working together to achieve a cleaner city is vitally important to protecting the local environment in Manchester. Since 2019 there has been an overwhelming response from residents, young people, businesses, and partners - with more volunteers than ever organising clean up events. However, since the onset of the pandemic there has also been an increase in fly tipping activity, which has been seen across the country. Significant efforts will be needed by all land managers across the city to better protect the physical environment. This will need to be supported by a deeper commitment to engage and educate residents, young people, and businesses. It is incumbent on all stakeholders in the city to tackle this issue and hold perpetrators of fly tipping to account.

1.8 This report is the annual report that provides an update on progress in delivering waste, recycling, and street cleansing services. The approach being taken to maintain service delivery through this period. This report explores the factors affecting this and identifying key priorities for the future.

2.0 Impact of the Pandemic (COVID-19) and Brexit

Household Waste Arisings

2.1 The changes in working arrangements, socialising and holiday plans due to the pandemic have led to residents spending more time at home. This has led to a significant increase to household waste arising's. In August 2021 tonnages remained higher than forecast, residual waste (+8%) and commingled (+5%). This is expected to increase waste disposal costs by the end of 2021/22 (+£1m). The increase in waste is due to several factors: more food and drink consumed at home, more people working from home, increased home deliveries, intermittent travel restrictions for holidays in the UK and abroad.

Biffa's Operations

2.2 Over the last 12 months Biffa's staff numbers have continued to be affected by COVID-19 sickness, staff shielding due to vulnerable conditions and requirements to isolate (test and trace). Agency staff have been used where possible to backfill positions. To date Biffa have continued to deliver most services during the pandemic, but at points some services had to be reduced. This has been compounded by the increased volume of material presented, which remains elevated compared to pre-pandemic. In July and September 2021 some recycling collections were paused due to low availability of HGV drivers. Since July 2021, the availability of HGV drivers has been impacted by a national shortage of drivers with this licence type. Biffa have also been impacted by higher rates of drivers leaving due to retirement, lifestyle changes and to pursue higher paid positions. A detailed briefing was shared with Members about these issues in August 2021 and steps Biffa are taking to build resilience in their workforce. This includes training for operatives to become HGV drivers and working with the Councils Work & Skills team.

2.3 The Waste & Recycling Team continue to work with Biffa to review staffing levels on a weekly basis, prioritise service accordingly and work with the communications team to disseminate key messages. The business continuity plan was enacted early on and supports the decision-making process to determine the prioritisation of services. Non-statutory guidance issued by Defra on 7 April 2020, provided advice regarding prioritisation of services.

2.4 The safety of Biffa's staff during this period has been a key concern for Officers and Trade Unions. Biffa have worked agilely through this period to ensure that the service was delivered in-line with the latest health and safety guidance from the Waste Industry Safety & Health forum (WISH); Public Health England (PHE) and Government workplace guidance.

2.5 The collection of waste has been managed within the contract budget, through the prioritisation of services and reduction in collection frequency for green bins (winter schedule applied throughout 2020 and 2021). Biffa have funded overtime to recover missed collections. The effect of increased tonnages, additional bins and side waste has placed significant pressure on collection crews. During periods this has resulted in missed service on day of collection, which has been recovered the following day.

3.0 Biffa Performance Update

Background

3.1 Biffa are responsible for providing domestic residual and recycling waste collection services, planned and reactive street cleansing services for defined land types. The contractor is required to provide services to an agreed standard and within a set SLA – which varies dependent on land type and waste type. The Grounds Maintenance Team are responsible for litter removal in the parks, except for the City Centre. There are some land types, which

form part of the corporate estate and open green space network which are not included in the proactive street cleansing contract with Biffa. These are managed by other service areas and are not included in scope of this report.

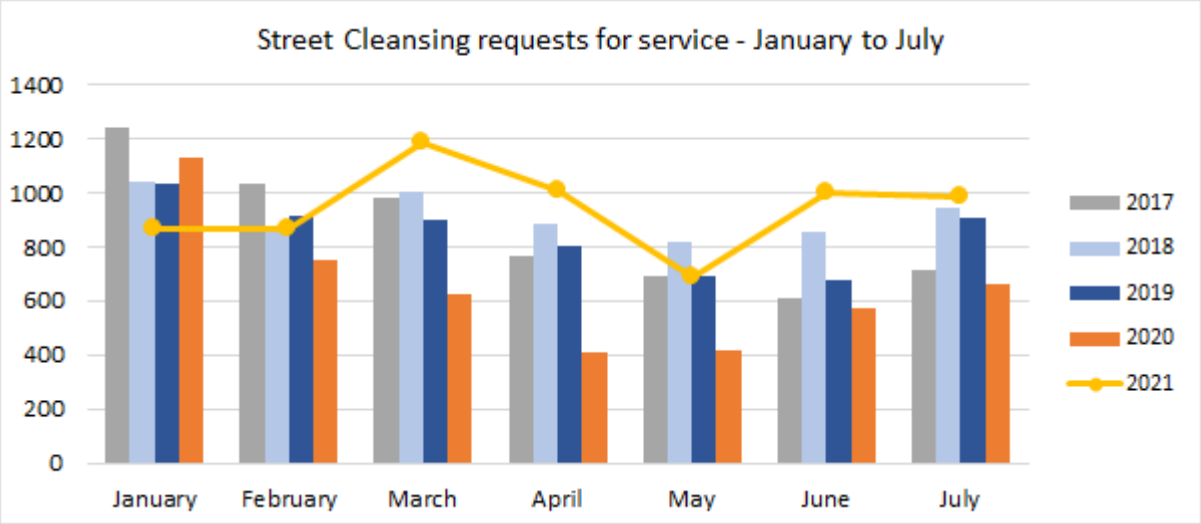
3.2 The contract was awarded to Biffa following a comprehensive procurement process, the contract commenced on 4 July 2015. The agreement is for 23 years (3 July 2038) with break points (expiry dates) in 2023 and 2031. The break points provide an opportunity for both parties to review the contract and key priorities. There will be further engagement with members to inform the work being undertaken on the options to be considered. Neighbourhoods & Environment Scrutiny Committee (NESC) discussed the procurement process for this contract on 10th October 2018, and further detail can be found in the service report. The contract allows for deductions to be made via the Price Performance Model (PPM). Members have previously received the detail of this model and how it is applied. In 2020/21 application of the PPM resulted in £10,000 of deductions. Further detail regarding delivery of the contract, service specification and approach to contract monitoring can be found in section 3 of the service update report to Neighbourhood & Environment Scrutiny Committee (NESC) in October 2019.

Street Cleansing

3.3 In the 12 months to July 2021, requests for street cleansing had increased 27% (2,198) compared to the previous year. A significant majority of this increase came in the last 6 months where requests had increased by 2,295. Street cleansing requests in January 2021 saw the largest drop in the last four years, down by 262 from the previous year and 374 from January 2017.

3.4 Requests have continued to rise this year from February to July, as compared to last year and two years back. It is believed this in part includes litter removed by volunteers which saw a significant upturn during the same period. The graph shows the first lockdown last year impacted significantly on reduced reporting likely due to people staying at home following lockdown, although restrictions were still in place this year until 21st June but were eased to allow local movements (8th March onwards) the number of requests have increased significantly.

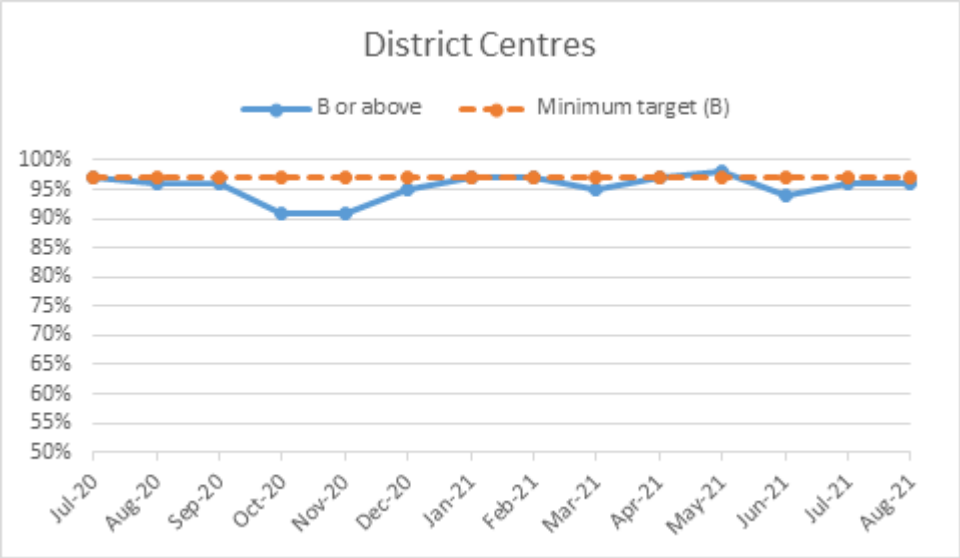
3.5 In the period January to July, 91% of wards saw requests increase as compared to last year. Piccadilly (293), Gorton & Abbey Hey (140) and Charlestown (132) observed the biggest count increases. The wards that showed a decrease in requests since last year were Ancoats & Beswick (-116), Chorlton (-43) and Rusholme (-16). Dust, dirt and littler is still the most prominent type of litter in 2021. During January, this litter type dropped by 80, however this increased to more than double the requests during March and April this year as compared to last year when requests significantly reduced during the first lockdown period.



District Centres

3.6 The standard of cleanse in District Centres dipped in parts of the city during Autumn 2020. Biffa reported some disruption to service due to the pandemic which impacted the Biffa workforce during this time. In general Officers are satisfied that standards have improved since performance issues in 2019 and standards are now generally being met across the city. Infrastructure to enable social distancing has created litter traps which Biffa have endeavoured to adapt to, but in parts cleansing with a mechanical sweer is not possible. Officers closely monitor these areas.

Graph showing the results of MCC cleansing assessments of District Centres

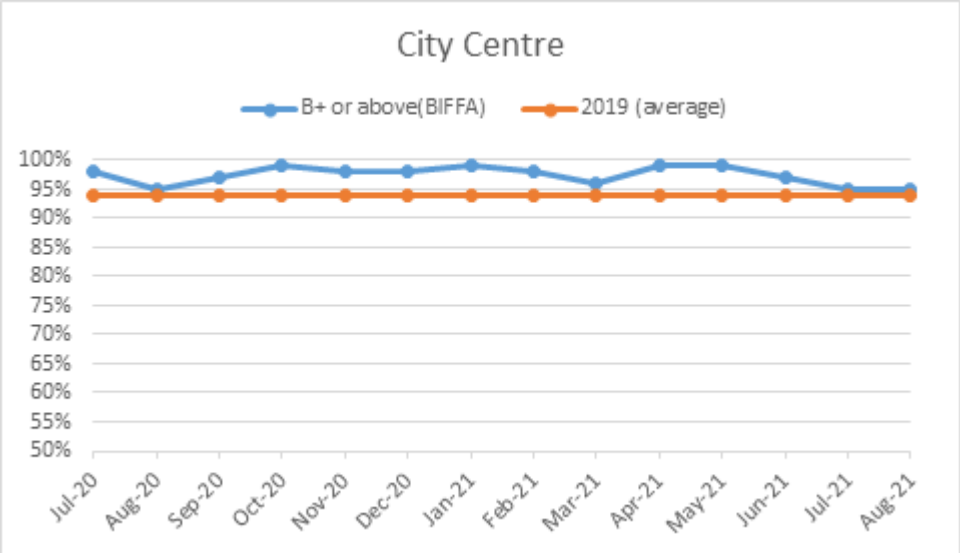


City Centre

3.7 City Centre inspections have shown continued improvement since 2019 and have been consistently high throughout 2020 and 2021. The addition of smart bin technology in late 2019 has allowed a smarter allocation of resource and helped maintain and increase high cleansing scores. During the winter lockdown and through periods of restrictions during 2020/21, Biffa took advantage of the quieter streets to perform detailed cleansing and improve the streetscene within and around the city centre. Infrastructure to enable social distancing has created new litter traps, which have been problematic at points as restrictions reduced and the day and night-time economy re-opened. Biffa have worked with Officers who have identified hotspot locations to adapt their approach to cleansing these areas.

3.8 The significant increase in external table and chair areas for food and drink establishments has transformed parts of the public realm. Biffa have worked together with City Centre Licensing Out of Hours Team and partners such as City Co (via the Intensive Neighbourhood Management (INM) partnership) to tackle new litter and waste management challenges which have emerged. Businesses are required to take responsibility for their new external areas as necessitated by the table and chair licence. Officers from Neighbourhood Services have supported business clean up initiatives. City Co have a cleansing guide for businesses which provides practical advice for businesses to keep their external space clean.

Graph showing the results of NI195 cleansing surveys City Centre



3.9 Increased staining of pavements has been an issue in the city centre due to impact of restrictions which increased the consumption of take away food and drink, and prolonged periods of dry weather. Laterally the annual deep cleanse programme (completed by contractor Ramora) has been increased in high footfall public realm areas, this was enabled following a successful application to the Welcome Back fund. Biffa have increased their ability to respond to smaller spillages with new mobile jet wash equipment which has

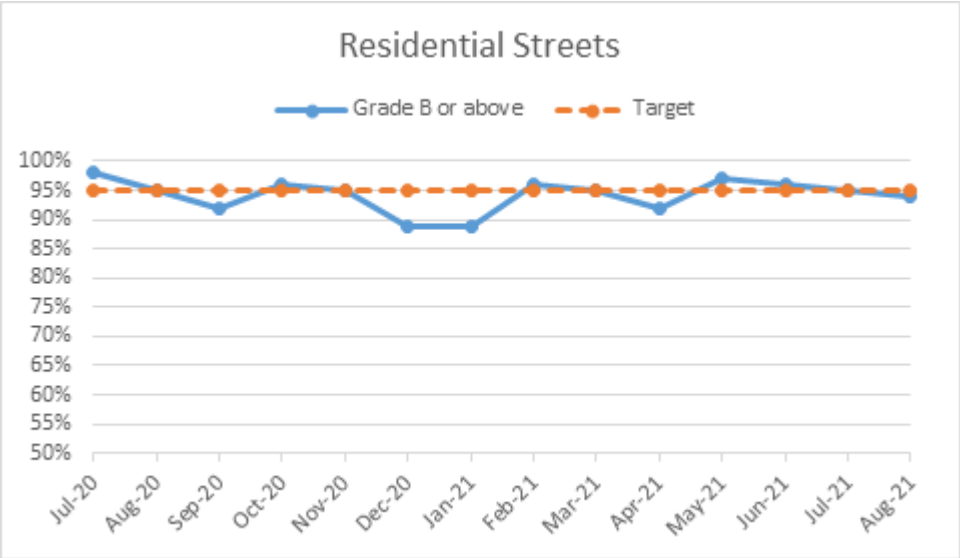
proved effective. This has been useful for areas impacted by spillage of bodily waste.

3.10 As previously noted, Biffa work closely with city centre-based Officers and partners (GMP, City Co) via the INM partnership. This has been critical in enabling Biffa to cleanse public realm areas which have been impacted at points by anti-social behaviour. This behaviour creates significant littering challenges, which are often time consuming to recover and diverts staff from normal cleansing schedules. Biffa staff have also impacted by abusive behaviour perpetrated by members of the public. The INM partnership has been critical in supporting Biffa to safely undertake their work. This remains an ongoing priority for the partnership.

Residential Streets

3.11 In the north and central areas of the city, the scheduled street cleansing is undertaken on a fortnightly basis. In the South wards the frequency is three weekly. As previously reported (NESC, October 2019), Biffa undertake an intermediate inspection in-between scheduled cleanse to ensure the area has not dropped below the required standard (B). MCC Monitoring Officers also undertake these checks to ensure Biffa are delivering the service in-line with expected standards. Residential streets experienced an expected dip in standards during leaf fall period (Oct – Jan), which is a seasonal trend. Generally, performance in this area has been good and standards are being consistently met. However, it is recognised by Officer's that resident's perception of street cleansing may not align with this assessment. It is believed this disconnect, in part, is due to the rate of deterioration in some parts of the city.

Graph showing results of NI195 surveys in residential streets



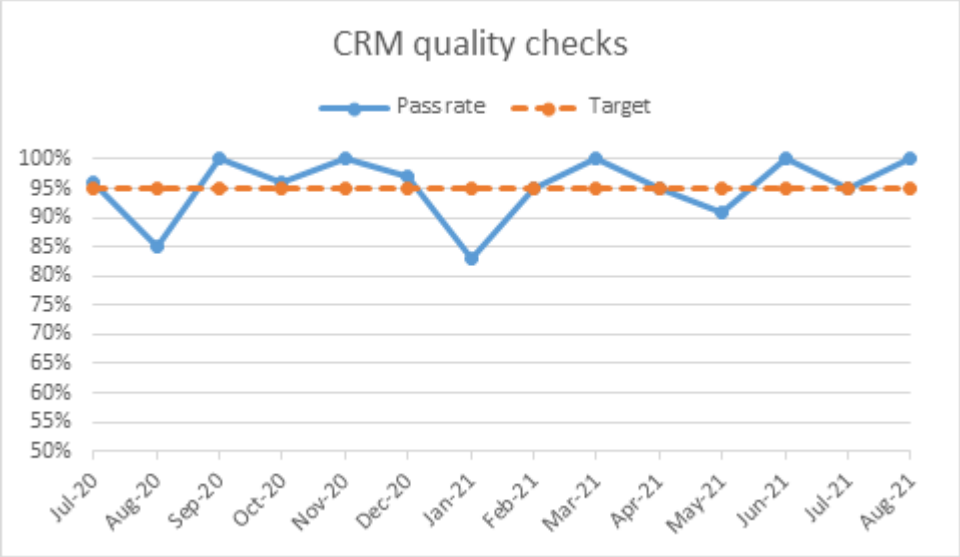
3.12 During the leaf removal programme Biffa provide additional resource above standard street cleansing levels to remove the additional leaf fall and ensure street cleansing standards are maintained. The street cleansing programme

outlined previously, continues as normal and is supplemented by extra sweeping in areas affected by leaf fall. The level and frequency of this will be determined by monitoring. Leaf fall is heavily weather dependant and as a result requires close monitoring and effective supervision of staff. Biffa have dedicated supervisors for the duration of the programme. MCC also be monitor the standards of the programme.

CRM jobs (reactive cleansing)

3.13 Biffa have maintained satisfactory performance levels in their CRM job management, mostly meeting targeted levels. This is an area that is particularly challenging for Biffa as it is reliant on information logged on the CRM system and operatives visiting jobs away from the main schedule and rectifying. MCC ensure these jobs are regularly quality spot checked. The combination of a new CRM system (through RBDxP) and management controls within Biffa should bring further improvements in this area.

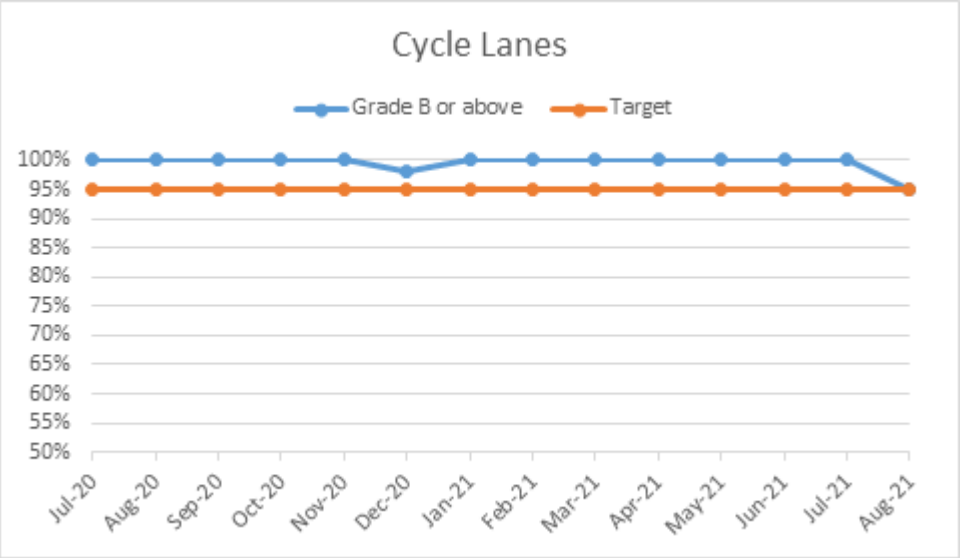
Graph showing results of CRM quality checks (dust, litter & dirt issues)



Cycle Lanes

3.14 Cycle lane cleansing is completed as part of the overall street cleansing programme and as such the road type and rates of deterioration directs the schedule of clean, rather than the type of cycle lane. All segregated cycle lanes are covered by the arterial road cleansing programme which involves a weekly clean and should be left at an NI195 grade B standard immediately after clean. Any other cycleway is covered by the regular residential cleanse, on the same day as any road or footway in the area. A detailed clean takes place on a scheduled day and deterioration monitored in between cleaning cycles. Both Biffa and MCC conduct NI195 monitoring of all areas, including cycleways, both straight after clean and between cleaning cycles. The results of these are reviewed monthly.

Graph showing cleansing scores for cycle lanes



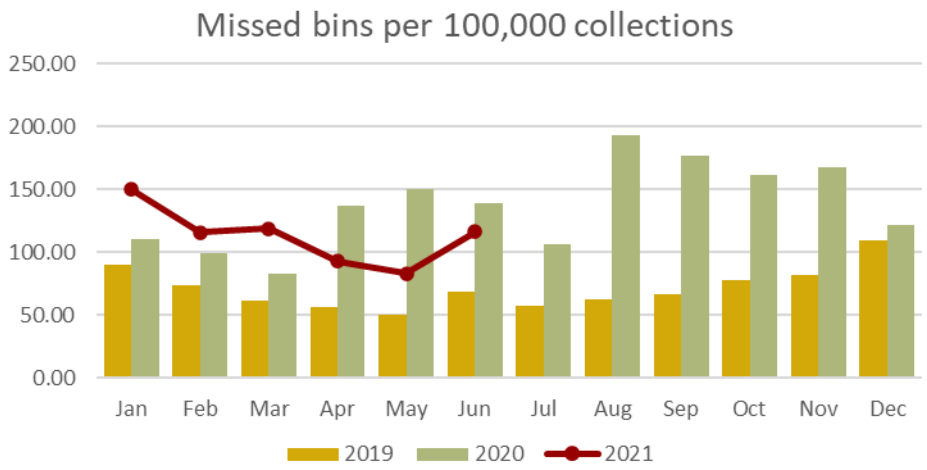
4.0 Bin collections

Missed Collections

4.1 Biffa empty in the region of 2.5 million bins every month. Outside of periods of service interruption or inclement weather, less than 0.06% of these collections result in a resident contacting the city because their bin was not emptied. If Biffa missed 0.01% of their collections, then this would represent up to 250 households. To measure performance, officers measure the number of reported missed bins per 100,000 potential collections. This ensures that patterns can be tracked irrespective to changes in collection regimes or increases in household numbers. Historically, this was an area of strength within the contract, but increases in missed collections have been observed since Q3 2019/20. Biffa reported that collection rounds had reached maximum capacity following years of incremental levels of low-rise property growth across the city. Benchmarking has shown that Manchester's collection rounds are amongst some of the most efficient in the sector in terms of number of bins collected by round, and outside of covid were assessed as close to maximum capacity.

4.2 The pandemic has presented Biffa both staffing and waste volume challenges. To maintain service delivery of all waste and recycling types it was necessary to reduce green bin collection frequency to fortnightly (in-line with the winter schedule). As detailed in section 1.0 household waste and dry recycling tonnages remain elevated compared to pre-pandemic levels. Higher levels of agency staff result in more mistakes being made as they adjust to new collection maps. These factors combined have led to higher rates of reported missed collections as shown in the table below.

Table showing levels of missed collection reports



4.3 The contract requires Biffa to rectify missed streets within 48 hours or face a penalty of £1k per street. The number of reported missed collections does not reflect the total number of actual missed collections. Last year Officers instructed Biffa to focus their administrative support towards ensuring missed collections and errors are detected ahead of reports being made and ensure repeated missed collection issues are addressed. As detailed in section 2.0 Biffa have mostly recovered missed collections the following day. Feedback was provided by members at NESC (2020), regarding communication of service issues with residents who may not be able to access updates provided on social media or the council webpages about delays to collections. Officers worked with the Communications Team and Policy, Performance, and Reform Team to identify households which may be digitally excluded. Letters were posted to these households in December 2020 to explain the impact of the pandemic on bin collection service and provided advice what to do if bins were not collected on the normal day of service.

Bin Returns

4.4 In October 2019, the NESC highlighted concerns regarding the issue of crew attitude and behaviour in relation to poor returns of bins to pavements and spillage. Historically this has been an under reported issue by residents and little data existed to understand the scale of the issue. The traditional approach to monitoring bin returns and spillage was either directly in response to customer reported issues and through proactive supervisor audits – each crew were audited once per month. Biffa were instructed to measure and improve this area of the service.

4.5 In November 2019, Biffa utilised the existing vehicle 360° cameras and developed a new model to monitor crew performance. Using this technology, Biffa's management team were able to see exactly which crews were not meeting the expected service standard and use the evidence to provide a learning opportunity and reinforce the desired service standard. The new model reduced the time required to conduct an audit which allowed Biffa to

increase the number of crew audits to once weekly. Since the onset of the pandemic monitoring of bin returns via this method reduced as resource was prioritised towards ensuring the delivery of service. Since restrictions have reduced these audits are now being completed again and Biffa recognise that making improvements in this area is a key priority.

Passageways (Bin collections)

4.6 Communal Container bins in passageways continue to be one of the most difficult areas of the service for both MCC and Biffa. The shared nature of these bins makes them a target for commercial abuse and poor waste management. Moreover, contamination of recycling bins remains a persistent issue that is both costly to the Council as well as being operationally difficult to manage for Biffa. MCC have extensively monitored this area for several years now and, despite the persistent challenges, have seen a large improvement of bin emptying in these passages. It must be noted that during points over the last 12-month performance dipped when the crews were impacted by COVID absence. This service requires detailed crew knowledge, and it takes time for new staff to familiarise themselves with rounds and the requirements of individual passageways. Biffa are working to address this issue. Officers continue to closely monitor performance requiring rectification if service is not provided to the required standard.

Table showing percentage of passageway bin collections passing checks against collection schedule

Year	2018	2019	2020	2021 (Jan – Aug)
Pass rate	80%	93%	93%	86%

4.7 Officers currently inspects around 400 bins in passages per month and without this level of scrutiny these results would certainly fall. The impact of MCC's monitoring can clearly be shown in the improved pass rate since close monitoring of this element of the service began in 2018. The sheer volume of work and challenging conditions means crews will attempt to cut corners and need close supervision. An area that highlights this issue clearly is sweeping around containers that should occur on a weekly basis. This area requires further improvement.

Passageways (Quarterly cleanse)

4.8 All publicly adopted passageways should be cleansed by Biffa on a quarterly basis. This is in addition to bin emptying and sweeping (once per week) around containers in those passages that are containerised. At the NESC (October 2019) Members expressed concern about this area of the service. An audit of this area showed that Biffa were falling significantly short of expected standards for this service. As a result, an escalation to the Strategic Board required Biffa to implement a formal improvement plan in November 2019. Biffa's response to the improvement plan was to significantly increase resources to recover standards and dedicate a

supervisor to the service. Since the commencement of the improvement plan (commenced Nov 2019), members with passages in their wards are sent pictures and maps showing the completed passageway work. Officers are satisfied that Biffa now complete the programme to expected timescales and standards.

Passageway Container Service Improvement Programme

4.9 As discussed at NESC in October 2019, the passageway container service covers 900 sites serving 15,500 properties across the city. During 2020 and 2021 most sites have been converted to reverse lid recycling containers and new low-profile locking posts to tackle recycling bin contamination and reduce litter traps. A small number of streets opted to move to individual wheeled bins. These are properties where residents have previously expressed an interest in moving back to individual bins or where officers felt individual bins would be a better solution than a communal system and most residents agreed.

4.10 As part of this project officers also assessed whether each site is still in the best position, if individual bins would be a better option and whether each street has the correct capacity and collection frequency for their refuse and recycling. Officers continue to monitor this as waste behaviour has been uncertain during the COVID-19 pandemic and is now starting to settle. Officers worked closely with Compliance and the Flytip Investigation Team to ensure that businesses and trades are not misusing containers intended for residents and that communities are engaged and supported to potentially improve and beautify their passageways. Steps are being undertaken to consider appropriate interventions for sites vulnerable to fly tipping in conjunction with the target hardening programme.

Apartments

4.11 Following a period of significant growth in the apartment sector and an increase in recycling participation, following the apartment recycling programme in 2018-20, additional resource was approved in 2020/21 to support these additional bin collection requirements.

Electric Refuse Collection Vehicles (eRCV)

4.12 Following Biffa's successful trial of an eRCV in 2019, a business case was developed with the Energy Saving Trust to recommend the replacement of 27 end-of-life diesel trucks with electric alternatives. In March 2020 the Treasurer and Executive approved £9.4m investment to fund the new eRCVs and electric charging infrastructure. In September 2021, over half of the new vehicles were in operation. The remaining trucks are due to be delivered by the end of 2021. It is believed Manchester now has the UK's largest-ever fleet of eRCVs. They will reduce carbon emissions by an estimated 900 tonnes and hopefully help to halve direct emissions from the bin collection vehicle fleet by 2025. The rechargeable bin trucks will also help improve air quality. The vehicles were launched in March 2021 with a public vote to name five of the

trucks. The winning names for the new vehicles were Sparkus Trashford, Usain Volt, Trashienda, Bin Diesel and Binspiral Carpets.

English Resources and Waste Strategy (2018)

4.13 The English Resources and Waste Strategy (2018), sets out proposals to reform the country's approach to material collection. Four consultations were released on 18th February 2019, covering: Consistent Collections; Extended Producer; Responsibility (EPR); Deposit Return Scheme (DRS); and Plastic Packaging Tax. There have been significant delays in this process due to Brexit and then the pandemic. Defra released the further consultation documents for the Waste Prevention Programme, EPR, DRS, and Consistent Collections consultations during 2021.

4.14 In the future the government may require all collection authorities to collect a consistent set of recycling materials, and some collection frequencies for certain waste streams may be mandated. This may result in residents being required to further separate materials collected at the kerbside (into additional receptacles) and collection providers collecting some streams (food) more frequently.

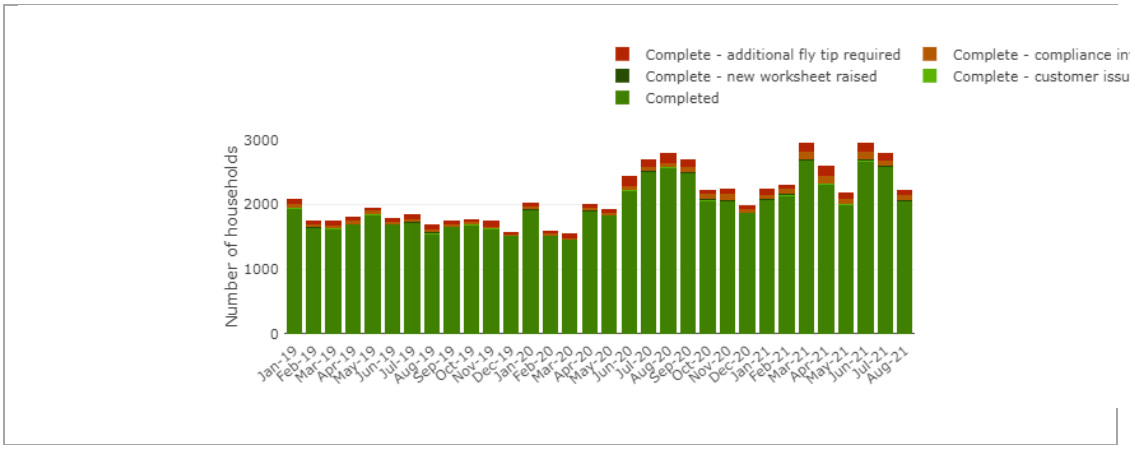
4.15 The government hopes that the implementation of a Deposit Return Scheme (DRS) for certain recyclable items such as bottles (glass and plastic) and cans will reduce littering. It is likely that items will be collected via reverse vending machines. The scheme will have an unknown impact on materials collected from the kerb by collection authorities.

4.16 The ambitions of the strategy align with the Councils zero-carbon strategy and fiscal measures to reduce packaging will be helpful. The strategy will require significant investment in recycling reprocessing infrastructure to support the processing of plastic items (pots, tubs, trays, film), for which there is currently a very limited market in the UK. Furthermore, there is a risk that Collection Authorities may not be sufficiently remunerated for additional receptacles households may require and increased collection costs (new burdens). The government has indicated that feedback from the consultations will be provided by the end of 2021, however, it is possible this may extend into 2022. The changes may have a significant impact on the future collections model. A detailed briefing note about the proposals is contained in Appendix 1.

5.0 Fly tipping

5.1 Fly tipping incidents increased as restrictions relaxed following the first lockdown (2020), reports then declined towards the end of 2020. However, from the start of 2021 requests rose again, peaking at almost 3,000 incidents in March. Following this, requests declined in April and May, but incidents rose again reaching almost 3,000 requests in June. This trend is not unique to Manchester and LAs across the country have also reported increasing number of incidents.

Graph showing fly tipping jobs completed by Biffa (Jan 19 – Aug 21)



5.2 The majority of fly tipping over the last 12 months (April 20 – May 21) were located on roads and pavements, followed by back alleyways. Waste tipped on roads and pavements rose by 4,415 (36%). Reports of black bags were up 55% (+2,033) and waste described as household increased 25% (+2,332), this aligns with Defra's analysis that the fly tipping of household waste increased across the country. White goods and unidentified waste also reported large increases and analysis of free text showed building waste was up 38% (1,139). Waste volumes to see the biggest % increases were tipper lorry loads up 118% (+1,509) and significant/multiple loads 100% (+414). Transit van loads reported the largest count increase +3,241 (+46%). Anonymous reports rose by 3,935 from 4,487 in 19/20 to 8,422 in 20/21. Reports made by residents also increased 23% (+2,458), while those made by MCC officers were up 26% (+1,281). Most wards saw reports increase in Q1 21/22 compared to the last two years.

Table showing number of fly tipping requests by ward

Top 10 wards	Jan - Jul 2020	Jan - Jul 2021	Count Change	% Change
Harpurhey	1,394	1,569	175	13%
Levenshulme	1,017	1,386	369	36%
Moss Side	551	1,247	696	126%
Clayton and Openshaw	1,071	1,231	160	15%
Gorton and Abbey Hey	956	1,209	253	26%
Miles Platting and Newton Heatl	795	1,115	320	40%
Cheetham	1,023	1,061	38	4%
Moston	866	905	39	5%
Longsight	602	798	196	33%
Crumpsall	580	686	106	18%

5.3 At the end of 2019 Officers from Neighbourhood Services worked together with Policy, Performance, & Reform to undertake a deep dive analysis looking into fly tipping in the top 10 wards for highest reports. This was to understand how different factors may be contributing higher reports within each ward. Following the increases observed at the beginning of 2021, further 'deep dive' sessions were undertaken in July 2021. The analysis shows that the hotspot

areas have not changed, but in some localities the number of incidents has increased. There appears to be a common set of factors which are present in the fly tip hotspots:

- Lower Super Output Areas (LOSA) affected are in the bottom 10-20% of the most deprived LSOAs in England
- Dense property count and dense population count x2+ (compared to city average*)
- low car ownership (city average 44.5%*)
- higher % rented properties and Registered Provider properties in some clusters
- lower % of adults speak English as main language (compared to city average 81%*)
- higher % of population classed as digitally excluded.

** Data source: Census 2011*

5.4 It is acknowledged the pandemic has impacted the delivery of projects and actions that were developed in response to 2019 analysis. Action plans are being developed at ward level and partners are being engaged to support activity. There is wider research underway with GM Districts and Core Cities to understand alternative approaches being taken to tackle fly tipping and the impact of policy frameworks. It is recognised that engagement, education, and enforcement need to increase for a step change in behaviour change to occur. It will be important for all land managers, social landlords and other key stakeholders to play an active part in this approach.

Fly tip Intervention Investment

5.5 In 2019-20 an extra £0.5m was committed by the city to tackle fly-tipping through additional compliance officers, CCTV and 'target hardening' projects. Regular updates have previously been provided to Members about this investment. This update focuses on 'target hardening', which is the process of installing physical deterrents that make a fly-tipping target harder to access or less desirable (such as bollards, barriers, and beautification). So far, 40 fly tip intervention projects have been completed and 15 further projects are in progress. The images below are fly tipping on an industrial scale on the whole stretch of a street, and the intervention installed to deter dumping.

6.0 Keep Manchester Tidy

The Growth of the Keep Manchester Tidy Litter Picking Community

6.1 2019 marked the start of increasing volunteer numbers with many residents, schools, businesses, community groups and organisations getting involved in the annual Great British Spring Clean. Thousands of volunteers were poised to get involved again in 2020. Although it was cancelled due to the pandemic, Keep Manchester Tidy wanted to hold onto the goodwill and enthusiasm of participants so began trialling Covid safe litter picking stations and offering equipment to enable people to litter pick locally as part of their daily exercise.

6.2 The Keep Manchester Tidy Facebook Group was used to help connect solo litter pickers. As the group membership grew, Anna Kom - Litter Hero Ambassador helped establish specific area groups to keep people motivated and enable them to connect with other litter pickers in their neighbourhood. These groups compliment established resident's groups across the city such as the Wythenshawe Waste Warriors and their various off-shoot groups in South Manchester. All these groups have been provided with litter picking equipment by Keep Manchester Tidy and Biffa have supported by ensuring that the litter that is collected by volunteers is then removed from the street. Keep Manchester Tidy also receives enquiries every week from corporate organisations wanting to get involved. Where possible, litter picking is hosted for the organisation, or they are supported to organise their own corporate event.

Littering in parks and green spaces

6.3 Last summer the city's parks and green spaces were well used by residents. As temperatures soared, people took to picnicking and barbequing at levels usually seen only on a sunny bank holiday. This created enormous pressure on local facilities, with bins vastly overflowing. Many residents expressed concern about the untidy state that Manchester's parks and green spaces were being left in. This summer, littering incidents were not as widespread but some parks, such as Platt Fields, suffered litter problems and therefore benefitted from targeted clean ups organised by Keep Manchester Tidy.

The 2021 GB Spring Clean and Love Parks Week

6.4 Building on the successful model of COVID safe litter picking stations, Keep Manchester Tidy hosted 15 events throughout the GB Spring Clean and Love Parks Week. All the events were well attended and have secured the two campaigns as permanent fixtures in the Keep Manchester Tidy annual calendar.

Behaviour Change Campaigns

6.5 Keep Manchester Tidy has been involved in trialling new campaigns across the city. The 'Less is More Campaign' has been developed by Keep Britain Tidy to tackle incidences of fly-tipping by encouraging residents to think about

the amount of money that is wasted on clearing up dumped rubbish and how that money could be better spent on things that matter to the community. The campaign is currently being evaluated by Keep Britain Tidy, but initial feedback is that that the value-based messaging used in this campaign would be welcomed in many of the city's wards.

6.6 Keep Manchester Tidy has also trialled a chewing gum campaign in the city centre using materials provided by Mars Wrigley. In addition, gum recycling facilities have been put up on Cutting Room Square and an engagement day was held in the area. Members of the public were very surprised to learn that chewing gum can be recycled due to its plastic content. This campaign is currently being evaluated by BMG, an independent research company.

6.7 Existing campaigns are still being run in targeted areas. These include dog fouling, cigarette litter, on the go food and drink, fly tipping, and campaigns encouraging people to use a bin or take litter home. Keep Manchester Tidy campaigns were also featured at some of the city's major festivals including Manchester International festival and Manchester Pride. The LGBT Foundation reported that the pocket ashtray pouches were a great talking point and were particularly well received by the public.

6.8 Keep Manchester Tidy has two further campaigns to launch this year. One is a new dog fouling campaign called 'Do it for your dog' which has already appeared on social media. It will be followed up with a launch of the physical assets in a hotspot area. The second is a campaign which can be used by volunteers to highlight areas that have cleaned up. This campaign encourages the public to respect volunteers' efforts and be inspired to join a local litter picking group.

Examples of behaviour change campaigns delivered

Crime not to care campaign

Less is More - Values based campaign

Litter Campaign

City Centre Litter Campaign

Greening and Beautification Projects

6.9 It is well recognised that litter and fly tipping can be deterred by greening and beautifying areas. Keep Manchester Tidy set up a network of people with expertise to help identify and highlight top tips for greening and beautification projects. Keep Manchester Tidy supported projects such as alleyway greening and provided plants to groups and organisations leading their own initiatives.

Youth Engagement

6.10 Keep Manchester Tidy has supported the work of the Holidays Activity Fund by providing 5 workshops in collaboration with Biffa and other partners. These events saw more than 100 children and young people learn about litter and recycling before getting involved in a local clean up.

Eco Schools

6.11 With the declaration of the climate emergency, Keep Manchester Tidy is keen to support environmental work in schools. 17 schools signed up to attend the recent Eco Schools briefing meeting which highlighted new changes to the Eco Schools programme. This meeting effectively re-launched Eco Schools in Manchester. Working with Climate Change leaders, Keep Manchester Tidy will support these schools to achieve their green flag.

Case Studies

6.12 There are many individuals and groups involved with Keep Manchester Tidy and 3 of them are highlighted in the case studies below. Local artist Ciara Leeming has also produced a document illustrating the motivation and passion of some of Manchester's litter pickers. This is available via the following link: https://www.dropbox.com/s/5014m7xf474yulr/PIcking%20up%20the%20Pieces.pdf?dl=0

Case Study 1 - Introducing the Hong Kong Volunteers

Manchester has become home to many people from Hong Kong who have opted for resettlement due to the worsening political situation in the country. Andrea Chow, heads up the Hong Kong Volunteers and, driven by a strong sense of civic duty and a desire to give something back to Manchester, she wanted to get involved with Keep Manchester Tidy. She received litter picking equipment from Keep Manchester Tidy and now organises bi-monthly litter picks. These are proving very popular with at least 30 volunteers turning up to most events. The group have been keen to make a difference and chose Monsall as a particular area to target, having noticed a significant amount of litter near the metro link station. They partnered with established litter picking group The Fitter Pickers, turning litter picking into a cultural exchange, and have made a noticeable difference to the area. Keep Manchester Tidy have continued to work with the volunteers and have supported them to apply for funding which will help to formalise the group and secure its future.

Case Study 2 – NG Bailey and Continuing Corporate Social Responsibility

Engineering firm NG Bailey are currently working on the Town Hall project. They were keen to get involved in additional projects to support their ambition to demonstrate social value. They took part in Love Parks week by getting stuck in with a clean-up at Platt Fields. Louise Logan, Social Value Manager, then got in touch to say they wished to continue supporting Keep Manchester Tidy and would be getting their partners involved too. Since then, they have completed a clean-up at Philips Park and a clean and green project in the Northern Quarter. They plan to make Keep Manchester Tidy projects a regular fixture in their calendar.

Case Study 3 – The GB Spring Clean in Hulme

Councillors in Hulme set themselves the challenge of making this year's GB Spring Clean the biggest one ever. They started by contacting organisations, community groups and individuals across the ward and inviting them to attend GB Spring Clean briefing sessions. Keep Manchester Tidy gave a presentation at the sessions outlining why people should get involved and what support was available to them. A Hulme Litter Pickers group set up on Facebook was used to promote the GB Spring Clean. The neighbourhood officer also played a key role in recruiting participants and ensuring that everyone had equipment to be able to take part. At least 12 events took place including events led by One Manchester, Loretto College, Martenscroft Nursery, Friends of Hulme Park, Aquarius and Gaskell Gardeners and several resident's groups. The litter picking stations, one in Hulme Park and one in Barracks Park, were well attended and supported by local businesses and housing providers. The Hong Kong Volunteers also joined the Hulme Park event. The active promotion and provision of equipment certainly ensured that Hulme took the top spot as having the biggest ever GB Spring Clean.

7.0 Recycling Campaigns and Initiatives

7.1 Environmental concerns are increasing, and more residents are aware of climate change. However, the link between waste, recycling and climate change is not generally understood. In terms of household recycling, 18 million tonnes of CO2 are saved a year by recycling, the same environmental impact as taking 12 million cars off the road. (Source: WRAP Recycle Week 2021). Recycling plays a crucial role in protecting our environment and preserving our finite natural resources such as oil, sand, aluminium, iron ore and trees. Most people now regularly recycle; however, evidence suggests that there are still opportunities to increase recycling, just over half of households still dispose of items that could be recycled in their general waste bin, mainly aerosols and foil.

7.2 There is also an urgent need to address contamination, 80% of UK households put items in the recycling that are not collected. The impact of this means that once it enters the recycling system, it can potentially contaminate clean recycling thereby reducing the overall recycling rate and increasing the demand on raw materials.

7.3 Globally, the production of food accounts for up to 37% of greenhouse gas (GHG) emissions and requires significant resources including land, energy, and water. However, up to 40% is wasted. In the UK, 70% of UK food waste comes from households, equivalent to a value of over £14 billion a year and 20 million tonnes of GHG emissions. Supporting households to reduce food waste will support carbon reductions.

7.4 Ensuring information about bin collection services is accessible for all is a key priority for the service. Work has been undertaken with the Equality Team to review the current approach and is reflected in some new initiatives.

Bin Alerts

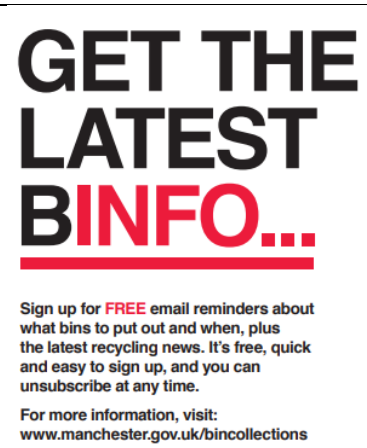
7.5 In July 2021 a new email reminder service was launched for bin collection days. Residents can sign up to receive an email the day before their bins are due for collection to remind them to put the correct bins out in time. The most visited page on the Manchester City Council website is the bin collection day checker, with over 1.17m visits in the last year. Email bin alerts will deliver this information directly to resident's inbox in a timely manner. In time, it will provide another communication channel to provide very targeted communication to improve recycling performance, share information about service changes and reassure residents in the event of disruption (such as spells of inclement weather). Sign up to this service is now available via the online bin collection day checker.

National Recycle Week (20-26 September 2021)

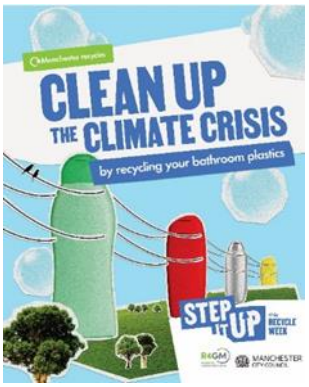
7.6 This year Manchester and Recycle for Greater Manchester (R4GM) supported National Recycle Week, this year's theme was 'Step it Up'. This year's campaign highlights the links between recycling and climate change and encourages all citizens to do more. With the UN Climate Change conference meeting in Glasgow for COP26 in November, this year's Recycle Week is a launching point to kick start efforts to address the climate crisis. 18 million tonnes of CO2 are saved a year by recycling, the same environmental impact as taking 12 million cars off the road. WRAPs Recycle Week assets were shared with internal and external stakeholders to amplify key messages. The assets will be edited to be district specific; an example of the advert is below (pre edited): R4GM promoted out of home advertising with Transport for Greater Manchester (TfGM) – this consists of tram covings, digital screens on the free buses, and digital advertising on the TfGM website

Examples of recycling campaigns and initiatives delivered

Nappy contamination campaign

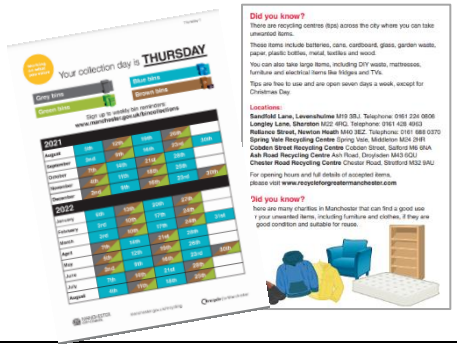


Bin collection email reminder system



National Recycling Week campaign

Translated recycling videos



Annual recycling calendar and leaflet

Pulpable recycling campaign

Pulpable Recycling Contamination (blue bin)

7.7 The quality of recycling collected across the city remains a concern - particularly the pulpable stream (blue bin). Under the GMCA disposal contract if pulpable recyclable material is rejected, the material will be downgraded to residual and the cost for processing will increase significantly from >£10 per tonne (variable due to market fluctuations). Feedback has been received from the operator that, some pulpable material collected in Manchester contains black bags of rubbish, food, and nappies – amongst other non-recyclable materials. Earlier this year Manchester and other GM Authorities supported Keep Britain Tidy's campaign to highlight the issue of nappies being incorrectly disposed in the pulpable bin. This campaign included a livery design for two collection vehicles and a targeted social media campaign. Since September 2021, canvassers from Biffa working under direction of the Waste & Recycling Team are targeting rounds with the highest rates of contamination to engage with residents about what materials can and cannot go in the blue bin. Improving the quality of material remains an ongoing priority.

Making recycling information accessible for residents (language)

7.8 During 2020/21 Waste & Recycling Team, Communications Team and partners Biffa worked together to produce videos explaining about recycling. In recognition that that English may not be the first language for many residents, a project was undertaken to make information about how to use the service more accessible in other languages. The idea was brought forward following insight gained by the Biffa Social Value Officers delivering 'recycling workshops' with the Adult Education service to over 650 learners (March 2019 to April 2020). By connecting with learners who took part in Talk English courses and ESOL courses (English for Speakers of Other Languages), the teams spoke to residents about: 1) How to recycle correctly in Manchester, 2) The importance of recycling correctly, 3) How to dispose of bulky household waste and 4) How to use Manchester City Council's website for waste-related issues.

7.9 Following the success of the workshops and in-person learning, a three-minute-long pilot video was created that could be used to reach an even wider audience. The concept was tested with the students and a group of Members and Officers. With help from the Translations teams and student volunteers who were fluent in other languages, the video was translated into the top 10 most widely spoken languages across Manchester. A British Sign Language version was also created. The videos can be shared on social media, by email or even shown to residents on a tablet or phone in person. The videos are available from the Council's webpages, along with subtitles and transcripts to make sure they are fully accessible. The toolkits have been shared with community partners and Neighbourhoods Teams for them to share with residents. The videos on 'how to use your bins' are available in the following languages: Arabic, Bangla, Cantonese, English, Farsi, Gujarati, Kurdish, Polish, Punjabi, Somali, Urdu and British Sign Language.

8.0 Conclusions and Next Steps

8.1 It is likely that the impact of the pandemic and Brexit will continue to impact delivery of waste collection and street cleansing services for all Local Authorities over the next 12 – 18 months. Maintaining delivery of services through the winter period, mitigating the loss of HGV drivers, reducing missed collections, and improving quality of service provided are key priorities for the Biffa contract.

8.2 The next 6 months will be a key period for the city to consider what the key priorities will be from the future collections model, which will also be shaped by the outcome of the English Resources and Waste Strategy (2018).

8.3 Tackling fly tipping and reducing littering is a key priority for the city. Significant efforts will be needed by all land managers to better protect the physical environment and work together with key partners and points of influence within the community to engage and educate residents, young people, and businesses. It is incumbent on all stakeholders in the city to tackle this issue and hold perpetrators of fly tipping to account.

8.4 Linking climate change to recycling behaviours and waste disposal choices, provides an opportunity to refocus resident and business actions. Increasing opportunities to educate young people through the Eco Schools programme will support these aims.

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Appendix 1 - English Waste and Resources Strategy (2018)

This overview has been adapted from briefing notes prepared by the GMCA for the Greater Manchester Waste & Recycling Committee in April 2021 and July 2021.

1.0 Overview

On 18th December 2018 Government published its long awaited Our Waste, Our Resources: A Strategy for England, which in the main sets out Government's interpretation of the European Union's (EU) Circular Economy (CE) package (EUCEP).

Following the publication of the Strategy, four consultations were released on 18th February 2019, covering: Consistent Collections; Extended Producer; Responsibility (EPR); Deposit Return Scheme (DRS); and Plastic Packaging Tax. There have been significant delays in this process due to Brexit and then the pandemic. Defra released the further consultation documents for the Waste Prevention Programme, EPR, DRS, and Consistent Collections consultation which concluded in July 2021.

The government had indicated that feedback from the consultations will be provided by the end of 2021, however, it is possible this may extend into 2022. The changes will have a significant impact on the collections contract.

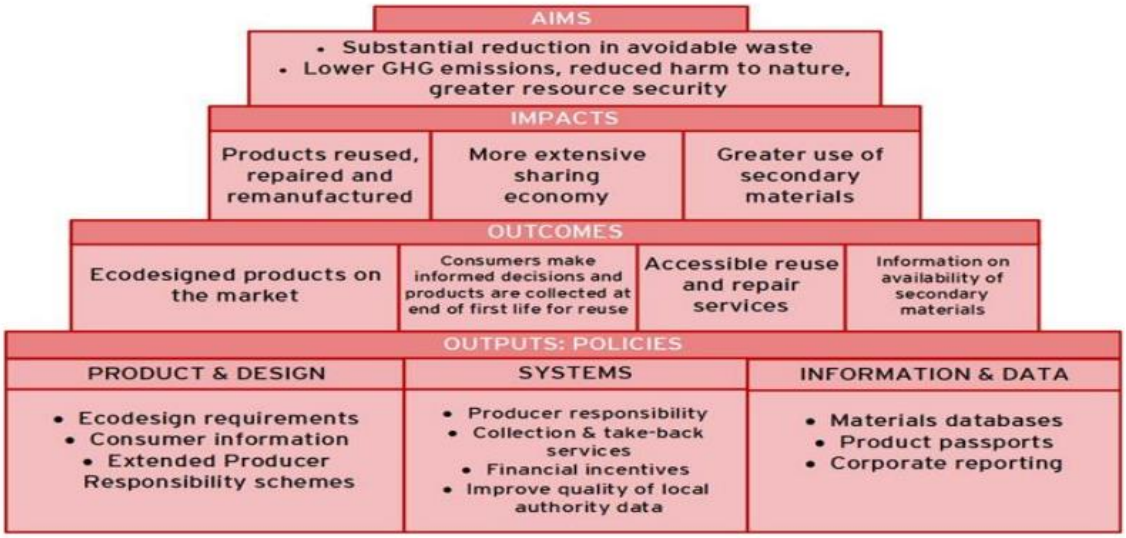
2.0 Waste Prevention Programme for England 2021

The draft Waste Prevention Programme (WPP) for England 2021 was released for consultation on 18th March 2021. The purpose of the programme is to set out how it will help deliver various ambitions within England's Resource and Waste Strategy. These include reducing greenhouse gas emissions; reducing the pressure on the natural environment; help safeguard the resource security; increase growth in new sectors; enhance competitiveness by keeping products and materials in circulation; and create jobs at all skill levels.

The revised WPP proposes to focus on: Transforming product design, making reuse and repair, as well as recycling, viable by supporting a shift in product design and provision of spare parts and repair information; Producer responsibility ('polluter pays') by requiring the producer to bear the costs of managing and recovering waste; Making it easier for consumers to do the right thing: making reuse/repair the default actions; Aligning the regulatory framework: for example, so that targets encourage action at the top of the waste hierarchy; and Supporting shared responsibility: recognising that action is required by business as well as a supportive framework by government, which gives recognition to work underway by business in the UK.

The WPP framework sets out its aims, impacts, outcomes and outputs and further explains how this framework will focus on the seven key sectors of construction, textiles, furniture, electronics, vehicles, food, and plastic packaging. The significance of focusing on these sectors are based on waste arisings and potential carbon emission reductions.

WPP Framework



3.0 Deposit Return Scheme (DRS)

The aims of introducing a DRS are to reduce the amount of littering and boost recycling levels for the relevant materials being collected. Whilst the Government remains committed to the scheme, they recognise that the pandemic has disrupted the economy and society and have therefore re-evaluated the timeline for the introduction of the scheme. Subject to the responses of the consultation, along with further evidence and analysis on the costs and benefits of such a scheme, the proposed implementation would be in late 2024 (rather than 2023) at the earliest.

DRS Proposals

The proposals for the DRS are set out in the following 8 key areas:

Scope: The scope of the scheme is to capture PET plastic bottles, glass bottles and steel and aluminium cans. Whether it is an ‘all in’ scheme - containers up to 3 litres (preferred option for Wales) or an ‘on the go’ scheme – containers up to 750ml remains undetermined for England and Northern Ireland at the moment.

Targets: Current proposals within the consultation are for the Deposit Management Organisation (DMO) to achieve a 90% collection rate after three years from introduction. It is proposed not to impose recycling targets on the DMO, but for the DMO to be legally obligated to provide evidence that all materials collected through the DRS have been passed onto a re-processor.

Scheme: Governance Within the scheme governance section of the consultation, it sets outs how the DMO will be held accountable for the scheme using a combination of regulations, the tender process to appoint the DMO and a series of key performance indicators. The consultation asks for feedback on contract length for the DMO, the scope within the tender specification and contract management.

Financial Flows: Chapter 4 explains how the DMO will be funded via three revenue streams; materials revenue, producer registration fees and unredeemed deposit. This section also sets out the approach to setting the deposit level and how secondary legislation, rather than primary, would be used to set a minimum and possible maximum level in order to provide flexibility and a lever for the DMO to achieve their targets. The consultation asks for feedback on the approach to funding the scheme, particularly around the unredeemed deposits and seeks views on the amount the deposit should be set at.

Return Points: This section sets out proposals for retailers who sell in scope drink containers to be obligated to accept returns of in scope materials by hosting a return point, most likely via a reverse vending machine. Also covered within this section is handling fees and how online services should be accounted for within the scheme.

Labelling: Proposals within the consultation explain how mandatory labelling would be legislated for as part of the scheme to ensure that all parties can easily identify in scope containers, minimise fraud by ensuring that once containers are scanned and returned, they lose their deposit value and cannot be returned again.

Local Authorities (LAs) This chapter explores the impact a DRS will have on local authorities (LAs) and how they will be financially reimbursed for the costs involved in treating the scheme's materials which haven't been returned. The consultation sets out 3 options:

- Do nothing approach which enables LAs to redeem the deposits of DRS containers collected in their waste streams;

- Enable the DMO to make payments to LAs for those materials via the EPR scheme administration; and

- A hybrid option where the DMO pays a deposit value on containers that are returned and any additional scheme materials in LAs waste stream is covered by a funding formula. The Government's preferred option is option 2 to be taken forward for final scheme design. The consultation asks for views on the viability of each of the options.

Compliance Monitoring and Enforcement: The consultation provides an overview of how the scheme will be monitored and enforced. It sets out examples of typical offences that could be committed by different scheme participants and which regulator would be responsible for dealing with the offence.

Timescale for Implementation: The table below sets out the timescale and key milestones in implementing the DRS.

DRS Proposed Timescales

4.0 Extended Producer Responsibility (EPR) for Packaging

Extended Producer Responsibility (EPR) system. Government recognises the current system needs reform and wants to make packaging producers “responsible for the full net cost of managing packaging once it becomes waste’’.

In the consultation Defra defines five overarching principles for packaging EPR:

1. Producers are incentivised through the fees they pay or by other complementary measures to reduce unnecessary and difficult-to-recycle packaging, to design and use packaging that is recyclable and to promote reusable or refillable packaging where it is a feasible option;

2. Producers will pay into the system either directly or through the price they are charged by others in the supply chain consistent with the ‘polluter pays’ principle;

3. Producers will bear the full net cost of managing the packaging they handle or place on the market including at end-of-life to achieve agreed targets and outcomes;

4. Costs paid by producers will support a cost-effective and efficient system for managing packaging waste, including the collection of a common set of packaging materials for recycling from households and businesses; and Extended Producer Responsibility for Packaging.

5. Actions by producers will enable consumers to play their part and correctly manage packaging waste through access to good services, labelling and other means that tell consumers how to recycle and dispose of packaging, and enhanced communications campaigns.

The desired outcomes from EPR are listed as:

- That unnecessary packaging - packaging that is not required to protect a product or excess packaging - is avoided; this will help reduce packaging and packaging waste;

- That opportunities to replace single-use packaging with reusable or refillable packaging increase, particularly for consumer products;

- That more packaging is designed to be recyclable, so packaging that cannot be recycled because of the material or the materials it is made from, or due to its format, will cease to be used where it can be avoided;

- That packaging waste recycling increases proposing that by 2030, 73% of all packaging placed on the UK market and in scope of packaging EPR will be recycled;

- That the quality of packaging materials presented for recycling increases across the packaging value chain and more packaging is recycled into higher value and closed loop applications; and

- That packaging EPR and the deposit return scheme contribute to less packaging littering.

The consultation proposes minimum recycling targets for the six packaging materials (plastics, paper/card, steel, aluminium, glass, and wood). These equate to an overall recycling rate for EPR packaging of 73% by 2030. It also proposes the introduction of a recycling target for fibre-based composite packaging such as food and drink cartons and single use paper cups. The consultation indicates the intention to consider whether 'closed loop' recycling targets for materials, in addition to glass, are required to drive quality and end markets, and to introduce obligations, possibly in the form of targets, to increase the use of reusable/refillable packaging.

Full Net Costs of Managing Packaging Waste

Government intends to progress with the broad scope of full net costs of managing packaging waste covering:

• The collection, sorting and recycling of packaging waste from households and businesses;

• The collection and disposal of packaging in the residual waste stream from households only; and

• Litter and refuse management costs, including bin and ground litter. Estimates indicate that the annual packaging waste management costs that producers will be required to pay will be in the region of £2.7bn in the first full year of implementation, with £1bn of this related to packaging waste collected from households, £1.5bn for packaging waste collected from businesses, and £200m for the management of bin and ground packaging litter. Government recognises that this is not a new cost for the economy, but a transfer from one part to another. This will incentivise producers to reduce their use of packaging, adopt reusable packaging where reduction is not feasible, or use easily recyclable packaging, and fund the recycling and management of single use packaging where it remains necessary.

Who Is Obligated to Pay and What Will They Pay?

For the EPR, Government proposes the introduction of a single point of obligation (i.e. a single producer is responsible for the cost of managing a piece of packaging). This will focus the obligations onto those who are best placed to reduce and/or

increase the recyclability of the packaging they use. The consultation details the proposed obligations for reporting and payment of costs for the different types of obligated producer. The consultation proposes that the fees producers will pay to cover the disposal costs of their packaging should be varied to reflect criteria such as recyclability. For instance, producers whose packaging is easily recyclable will pay lower fee rates, while fee rates for packaging which does not contribute positively to scheme outcomes will be increased.

Other Priority Materials to Consider

Plastic film and flexible packaging such as single-use carrier bags, bread bags, and wrappers make up a third of the 2.4mt of plastic packaging placed on the market annually in the UK. However only a small proportion is recycled due to challenges with collection, sorting and recycling as well as end markets. Government recognises that it needs to give a clear signal to help stimulate investment in sorting and reprocessing infrastructure. It therefore proposes that plastic films and flexibles should be collected for recycling as soon as is practical, and the costs of this paid by producers. It is assumed this will be possible by end of financial year 2026/27.

Developments in biodegradable plastics are being monitored. Presently there are challenges associated with the use and management of compostable and biodegradable packaging and evidence suggests that some of these types of materials do not fully biodegrade in the open environment and some require specific treatment at the end of their life. In addition, labelling can cause consumer confusion as it is easy to mistake for conventional plastic, contaminating and disrupting its recycling. Until such time as the state of evidence, collections and infrastructure for this packaging can be improved, it is unlikely to be considered recyclable under packaging EPR and will therefore attract higher fee rates.

The consultation seeks views on whether a mandatory cup takeback and recycling requirement should be placed on businesses selling filled disposable paper cups to provide for the separate collection of used cups (either generated in-store or consumed ‘on-the-go’). This could be through both instore and front of shop collection points and would extend to accepting all disposable paper cups at these collection points irrespective of brand or where the drink was purchased.

Payment for Management of Packaging Waste from Households

This section of the consultation will be of most interest to local authorities. The consultation sets broad principles underpinning the implementation of payment mechanisms (remembering that payments will be made to cover the costs of packaging in both recycling and residual waste streams (from kerbside collections and HWRCs). These include the scope of ‘necessary costs’ and that costs paid by producers should be for the delivery of ‘efficient and effective’ services. “Necessary costs” are broadly split into:

- Operational costs to collect, manage and dispose of packaging waste such as:

o Direct vehicle, staff and container costs (capital and revenue) for all collection methods (household and commercial waste kerbside, bring banks, HWRCs, litter);
o Maintaining and operating depots, transfer stations and other facilities required to support collection and disposal of packaging; Costs associated with transportation, sorting, sampling, processing, and the preparation of packaging waste for recycling, reuse and/or disposal (capital and revenue expenditure). Income received through the selling of materials to be netted-off (perhaps using a published indices);
o Maintenance of capital items above; and
o Associated overheads (e.g. HR, IT financial services) and materials marketing costs.

- Support costs in achieving scheme outcomes and targets, including communications and provision of public information on waste prevention and recycling, efficiency reviews, data gathering and reporting, performance incentives, and supporting local authorities in contract negotiations and variations with service providers. Any costs paid will be net of income from the sale of recycling (the value based on the monthly or quarterly application of published indices). Payments could be made a year in arrears on a quarterly basis. On efficient and effective services, Government proposes that payments of "necessary costs" reflect systems and services designed and delivered around good practice and reasonable benchmarks of cost and performance. Producers should not be expected to pay for what the Government terms "poorly designed or implemented services". However, in doing so necessary costs will account for geographic, socioeconomic, and other factors that influence cost and performance.

There is already in existence a system of waste collection benchmarks based on rurality of individual local authorities. It would appear the Government favours the use of benchmarking rather than an actual cost approach to calculate potential performance-based payments. It is recognised that a local authority's modelled costs could be lower than the actual costs incurred – this could be because the local authority has not adopted good practice, or it could be an extreme outlier within a peer group (e.g. very rural or very urban). Equally, some local authorities could receive more than their actual costs, either because they are performing above benchmarks levels, or are an outlier. There will be processes in place to assess the robustness of the approach and arbitrate if any disputes should arise. If an authority performs below its benchmarked performance, then it will receive less than its full payment (the Government proposes a limit of 80%). Conversely, if an authority outperforms its benchmark, it could receive an increased payment. The Scheme Administrator will be encouraged to support authorities to improve to meet performance benchmarks, to obtain their full payments.

Payment for Management of Packaging Waste from Businesses

The consultation sought views on approaches to facilitate payments from packaging producers to businesses generating packaging waste, including transit and industrial packaging where a producer is not able to prove they had managed this packaging themselves. Proposals are also included for a change in the way commercial waste

is collected to facilitate improved recovery of packaging. These may have a direct impact on local authority trade waste services.

Payment for Management of Packaging Disposed of in the Litter Stream

Packaging makes up a significant proportion of litter so the producers of littered packaging should be responsible for the costs of collection arising. The consultation discusses the payment of amounts to the various organisations responsible for who undertake litter collection.

Scheme Administration and Governance

The administration and governance arrangements for EPR will need to support producers in complying with their obligations and have robust process and financial flows and outcomes transparent whilst providing flexibility for producers to decide how best to meet their obligations. The consultation suggests (i) a single organisation managing EPR or (ii) multiple compliance schemes and a central administrator

Data

For EPR to function properly there will need to be a detailed understanding of how much obligated packaging is put on the market, in which stream (recycling or residual waste) it is directed to by householders and businesses (where appropriate) and how much is sorted and ultimately processed. All of this will need to be underpinned by a robust reporting mechanism. The consultation in many places stresses the importance of waste composition analysis to determine packaging quantities and proportions. There will undoubtedly be additional reporting requirements which are likely to fall under the heading of necessary costs.

Timescales

The figure below summarises the planned timescale for the introduction of the EPR. It is envisaged the first payments to local authorities will be in the second half of 2023.

5.0 Consistency in Collections

The Government expects the measures set out in the consultation could help to:

- Increase the quantity and quality of household and business recycling.
- Make recycling easier for householders and support comprehensive waste and recycling collections through establishing minimum service standards.
- Give confidence to packaging producers that an increased amount of quality recyclable material will be collected and returned to secondary materials markets.
- Improve investor confidence and help increase UK-based recycling capacity and minimise dependence on overseas export markets for recycling.
- Ensure an increased amount of separately collected food waste and garden waste can be recycled through anaerobic digestion and composting.
- Improve estimates for future recycling and residual waste treatment infrastructure.
- Ensure only what is necessary is sent for energy recovery or landfill helping to reduce greenhouse gas emissions; and
- Significantly increase job creation in collection implementation, promotion, and management of the new services.

The Government wants England to recycle more and improve resource efficiency. In achieving these aims the Government believes householders want consistent, reliable, and easily understandable waste collection services. Building on the first consultation, the second makes several proposals across the spectrum of collections.

The Collection of Dry Recycling from Households

The Government wants to provide clarity on what dry recycling should be collected – these ‘core materials’ are proposed to be:

- Plastics including pots, tubs and trays (PTTs), plastic ‘films’ and ‘flexible’ packaging; · Metal packaging (aluminium and steel cans), aerosol cans and foil/foil trays;
- Mixed paper and card.
- Glass bottles and jars; and
- Cartons (mixed with plastics stream).
- These should be collected separately from households to improve quantity and quality and should be collected from at least October 2023 to coincide with the first payments from the EPR system. Plastics films will be delayed until 2026/27 so that several operational challenges can be addressed.

Implications for collections across Greater Manchester (excluding separate collection) include:

- The addition of PTTs would be welcomed by the public but would require modification to our materials recycling facility – this may not be achieved by October 2023 and would require investment.

- Cartons – currently collected with paper and card so wouldn't be an addition but would require an exemption from collecting with the plastics stream.
- Plastic films – DEFRA is seeking views on how these should be collected as very few authorities collect films and flexible packaging at the kerbside.

Separate Weekly Collection of Food Waste

The Government is clear on wanting food waste collected separately on a weekly basis from 2023/24. However, collected food waste mixed with garden waste on a weekly basis may be something GM Authorities can demonstrate is the better option for Greater Manchester. Implications of weekly separate food waste collections across Greater Manchester include:

- Significant increase in fleet numbers and current depot space would struggle to accommodate this growth. There would also be an increase in vehicle emissions as well as a contribution to congestion across the conurbation.
- If Local Authorities are required to collect food waste separately from garden waste households would require an additional set of containers.
- The GMCA biowaste treatment contracts is set to expire at the end of March 2026 – this provides time to develop a strategy for biowaste from 2026.

Garden Waste Collection

The Government is keen to see every household access free garden waste collection reversing any existing chargeable services, but this was not universally supported. Further views are being sought but if implemented this proposal would have no impact on garden waste collections across Manchester but would limit future policy changes.

The Separate Collection of Recyclables from Households

In the first instance the Government wishes to see plastics, fibres, glass, and metals all collected separately (add to that food waste, garden waste and non-recyclable waste that is seven waste streams). However, mixing plastic and metal or glass and metal may be acceptable. It is recognised that this level of separate collection may not be technically, environmentally, and economically practicable in all cases. A process of demonstrating why separate collections is not practicable is proposed with assessments reviewed by the Environment Agency. Grounds suggested for not providing separate collections could include:

- Technical practicability – the impact of housing stock (e.g., flats, HMOs, student accommodation), availability of suitable containers, storage of containers at properties, and storage in existing waste infrastructure.
- Economic practicability - local authorities will need to demonstrate that their specific financial costs (caused by their local circumstances) make it significantly more expensive to have separate collections based on technical grounds.
- Environmental practicability - local authorities will need to make the case that separate collection is of no significant environment benefit based on, for example greenhouse gas emissions, reject tonnages, lifts per vehicle and journey length.

Implications for Collections across Manchester

In considering these three grounds for exception to separate collection to some extent the economic argument cannot be applied. The EPR regime is going to pay local authorities for the "effective and efficient" collection of packaging and the weekly collection of food waste will be financially supported by the Government's new burdens payments. However, there are concerns about the scope of these payments fully capturing increased costs.

On technical practicability – Greater Manchester's diverse and challenging housing stock does not lend itself for the introduction of several new waste containers. Additionally, separate collection requires more vehicles and as mentioned previously most Local Authorities do not have the depot space to accommodate an increased fleet.

On environmental practicability – the test is to determine 'no significant environmental benefit' of adopting separate collections. The research Wood (consultants) undertook for the GMCA, demonstrated that on a carbon metric having weekly kerbside sort collections reduces carbon by less than 2% across the whole waste system compared to GM's current service. Other environmental impacts such as air quality would also need to be considered.

It should be noted that the consultation is silent on the issue of health and safety. For several years the Health and Safety Executive (HSE) has been looking closely at waste collection. Initially it was the transition from sack collections to wheeled bins but now its focuses on the use of recycling boxes and the hand sorting or materials (generating manual handling, laceration, and noise hazards). Manchester's response referred to this, and it is understood DEFRA is consulting with the HSE on how health and safety can fit into assessments.

Minimum Service Standards

The Government will mandate the weekly collection of food waste and is considering the recommendation of minimum service standards of alternate weekly collection of residual waste subject to affordability and value for money.

Non-Household Municipal Collections

The Environment Bill which (the legislative vehicle that implements the proposed changes) also applies to non-domestic premises that produce household waste (e.g. schools and hospitals) and businesses producing commercial waste. Effectively these premises will be required to have the same level of recycling collections as households (a threshold of generation may be set for the collection of food waste). Waste collection companies (including local authorities) will have to provide suitable services. For Manchester this will require a review of the current contributions to waste school collections.

Funding

The funding of changes is said to be coming from two sources: 1) the Government's new burdens 'budget' to cover the costs of implementing weekly food waste collections; and 2) the packaging EPR payments for the collection of packaging for recycling or disposal. As these payments will be based on modelling it is not known yet whether they will fully fund the collections they cover. In both cases the scope of the payments is not clear. Some guidance was provided in the EPR consultation, but more clarity is needed.

Timescale for Implementation

The Government would like to see changes implemented from 2023 (even if only adding PTTs to plastics). However, it is recognised that one of the big barriers to change is contractual. The Government does not want to foot the bill for the impacts of changing services mid-contract term so will accept the phased introduction of changes until around 2031 where applicable.

Manchester City Council
Report for Information

Report to: Environment and Climate Change Scrutiny Committee – 14 October 2021

Subject: Climate Change Action Plan Quarterly Progress Report, Q2 July - September 2021

Report of: The Deputy Chief Executive and City Treasurer

Summary

The Council declared a Climate Emergency in July 2019 and developed a Climate Change Action Plan (CCAP) 2020-25, which was approved by Executive in March 2020. Quarterly updates and an Annual Report from year one (2020-21) of the CCAP are now available online, alongside the Quarter 1 report for year two (2021-22) at www.manchester.gov.uk. This report provides an update on progress in Quarter 2 2021-22 (July-September 2021).

Recommendations

The Environment and Climate Change Scrutiny Committee is recommended to note the contents of the report and the progress that has been made in delivering the Action Plan during the last three months (July – September 2021).

Wards Affected: All

Environmental Impact Assessment - the impact of the issues addressed in this report on achieving the zero-carbon target for the city
The Council's Climate Change Action Plan 2020-25 sets out the actions that will be delivered to ensure that the Council plays its full part in delivering the city's Climate Change Framework 2020-25 which aims to half the city's CO2 emissions over the next 5 years.

Manchester Strategy outcomes	**Summary of how this report aligns to the OMS**
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	The transition to a zero carbon city will help the city's economy become more sustainable and will generate jobs within the low carbon energy and goods sector. This will support the implementation of the Our Manchester Industrial Strategy and Manchester Economic Recovery and Investment Plan.

A highly skilled city: world class and home grown talent sustaining the city's economic success	Manchester is one of a small number of UK cities that have agreed a science-based target and is leading the way in transitioning to a zero carbon city. It is envisaged that this may give the city opportunities in the green technology and services sector.
A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	Transitioning to a zero-carbon city can help to tackle fuel poverty by reducing energy bills. Health outcomes will also be improved through the promotion of more sustainable modes of transport and improved air quality.
A liveable and low carbon city: a destination of choice to live, visit, work	Becoming a zero carbon city can help to make the city a more attractive place for people to live, work, visit and study.
A connected city: world class infrastructure and connectivity to drive growth	A zero carbon transport system would create a world class business environment to drive sustainable economic growth.

Contact Officers:

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy, please contact one of the contact officers above.

Manchester City Council Climate Change Action Plan 2020-25

Manchester City Council Climate Emergency Declaration July 2019

Manchester Climate Change Framework 2020-25

1.0 Introduction

This report provides a progress update on delivery of the Council's Climate Change Action Plan for Quarter 2 2021-22 (July-September 2021).

The progress report has been to the Zero Carbon Coordination Group to ensure its accuracy and transparency and will be published in an accessible format on the Council's website.

2.0 Background

A five-year Climate Change Action Plan (CCAP) 2020-25 went live following approval at Executive in March 2020.

Updates have been considered by Strategic Management Team and Environment & Climate Change Scrutiny Committee (and previously Neighbourhoods & Environment Scrutiny Committee) throughout the CCAP's first year, with an Annual Report for 2020-21 going to Environment & Climate Change Scrutiny Committee on the 9 September this year.

https://democracy.manchester.gov.uk/ieListDocuments.aspx?CId=358&MId=3974&Ver=4

Previous progress reports dating back to April 2020 are available on the council's website and can be found at:

https://secure.manchester.gov.uk/info/500002/council_policies_and_strategies/3833/zero_carbon_manchester/3

Following the establishment of the new Environment and Climate Change Scrutiny Committee, regular updates on delivery of the CCAP will be provided via the Quarterly Progress Reports, which have been scheduled into the Committee's work programme for the current year.

3.0 Recommendations

It is recommended that the Environment and Climate Change Scrutiny Committee note and comment on the progress that has been made in delivering the Climate Change Action Plan during this quarter.

4.0 Appendices

Appendix 1 - CCAP Q2 Quarterly Progress Report July-September 2021.

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Manchester Climate Change Action Plan 2020-25
Progress Update Q2 July – September 2021

Introduction

This report sets out the latest progress against delivery of Manchester City Council's Climate Change Action Plan (CCAP) 2020-25. All activity described in this report relates to the period in which the report is issued, in this case July to September 2021. Emissions data relates to the previous quarter due to lags in billing and data monitoring, in this case April to June 2021.

CO_2 Emissions

The CCAP has a target to reduce direct emissions of CO_2 by 50% over the five-year period of 2020-25. To achieve this, the Council has a target to reduce its emissions by 13% every year, for five years.

The CCAP also sets a carbon budget of 119,988 tonnes of CO_2 for the five-year period of 2020-25, calculated using science-based targets. Within this, the carbon budget for 2021-22 is 27,056 tonnes.

BUDGET

27,056 tonnes CO_2 – Emissions **Budget 2021-22**

5,681 tonnes CO_2 – Emissions released to date **2021-22***

**Emissions to date include best estimates due to billing timelines; the annual report qualifies actual emissions.*

The Council has emitted 5,681 tonnes of CO_2 between April and June 2021 which is 21% of the available budget – these are the most up to date figures for the year to date. These emissions relate to Council buildings, streetlights, waste collection, operational fleet and staff travel.

The charts below show a quarter-by-quarter view of emissions from April 2019 for the different Council activities responsible for direct CO_2 emissions. They show both seasonal differences, e.g. energy consumption and emissions peak in winter, the impact of COVID-19 and overall trends.

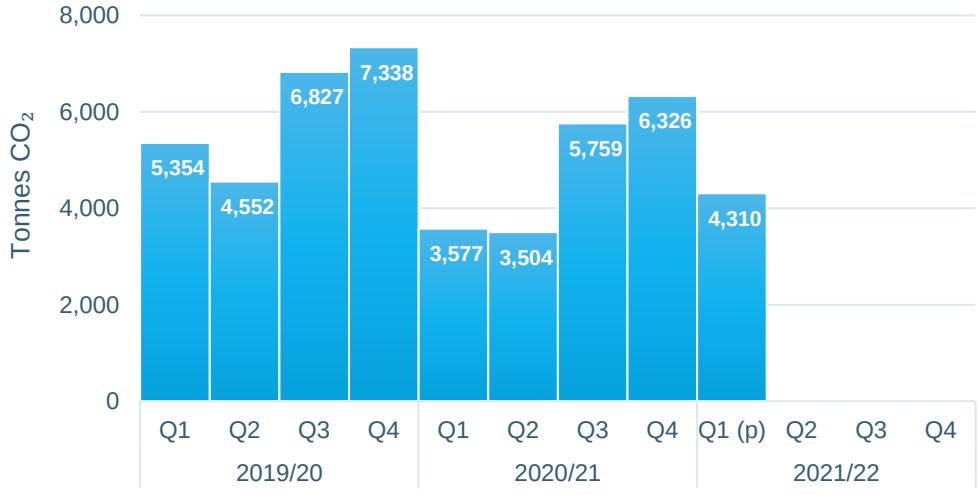
Note: where emissions data for the latest quarter has to include some element of a best estimate, for example where accurate billing or monitoring data will become available in future periods, figures are marked as (p) for provisional; where emissions data for the past quarter is revised, on the basis of more accurate data becoming available, figures are marked as (r) for revised. As data is being verified for the whole year at the time of writing this report, figures are marked as (r) for multiple quarters.

Two years of data has been included as COVID-19 meant that emissions in 2020-21 were unusual and so, in some cases, it is more meaningful to compare Q1 in 2021-22 to Q1 in 2019-20, rather than to last year.

Figure 1 shows that emissions from energy use in Council buildings in Q1 2021-22 are 19% lower than in Q1 2019-20.

This reduction has been driven by the installation of energy efficiency measures and renewable energy generation capacity, and by the decarbonisation of the national grid.

Figure 1: Council buildings emissions



Manchester Climate Change Action Plan 2020-25
Progress Update Q2 July – September 2021

Figure 2: Streetlights emissions

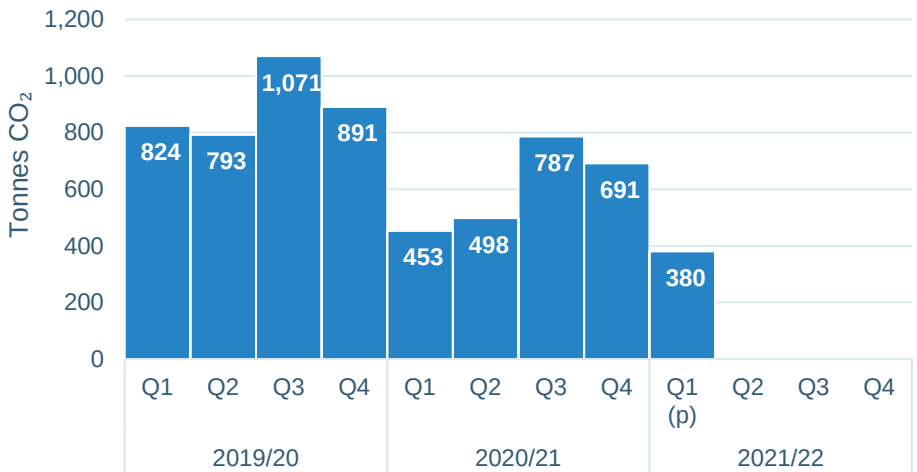


Figure 2 shows that emissions from streetlights are on a downward trend due to the large-scale retrofitting of LEDs over the last few years.

Emissions in Q1 of 2021-22 are 16% lower than Q1 in the previous year and 54% lower than Q1 in 2019-20.

The streetlights replacement programme is now complete and so changes in future emissions will be driven by seasonal factors only.

Figure 3 shows emissions from the waste fleet have remained relatively consistent over the past nine quarters.

Emissions are expected to fall at the end of 2021-22 when the full complement of electric refuse collection vehicles (eRCVs) will have been received and deployed.

Figure 3: Biffa waste fleet emissions

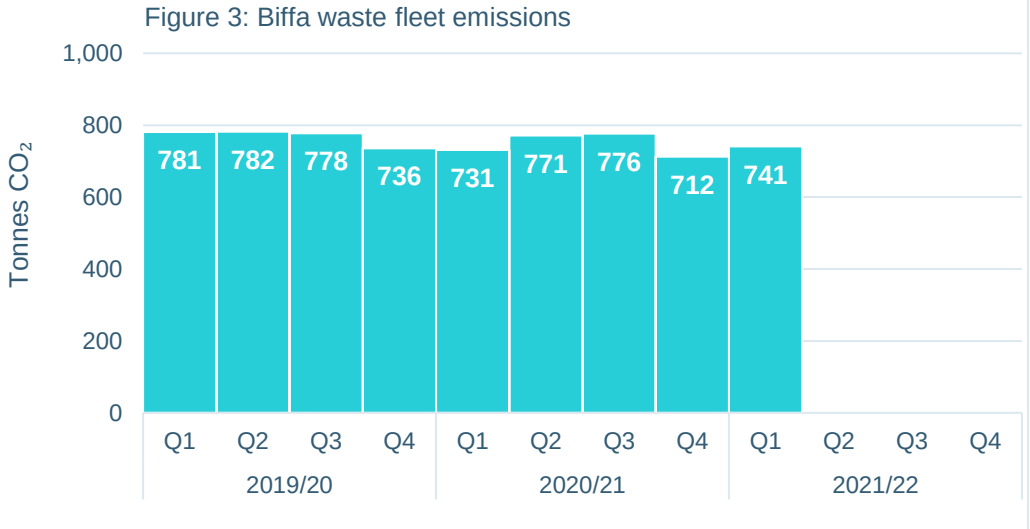


Figure 4: Operational fleet emissions

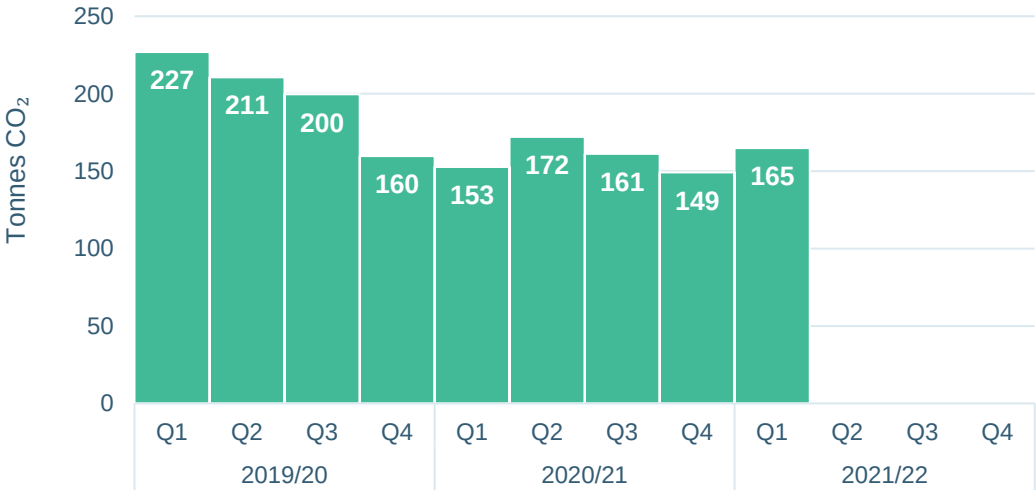


Figure 4 shows emissions from the Council's operational fleet have reduced by 27% when compared to the same period in 2019-20.

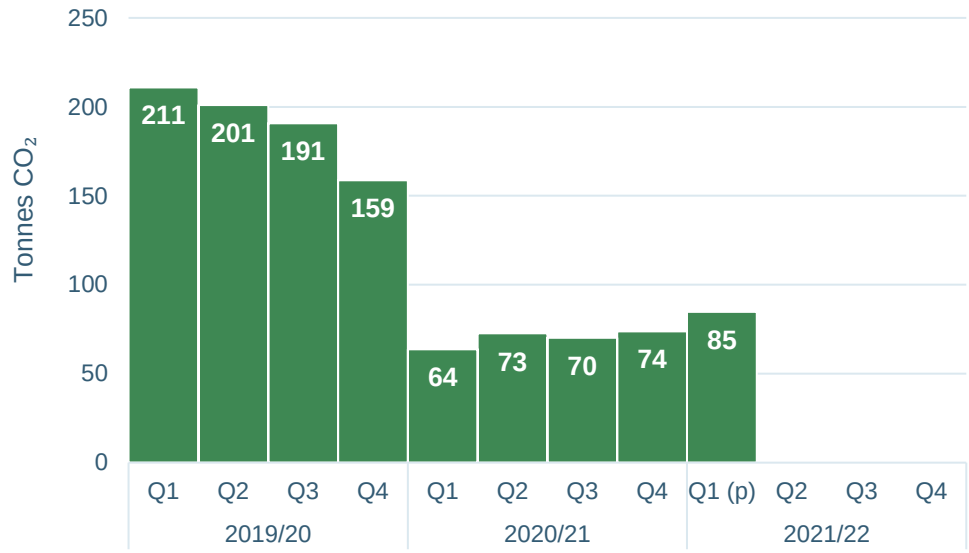
This is due to the fleet's rolling replacement programme.

Emissions from business travel by council officers and elected members reduced significantly throughout 2020-21 due to COVID-19 and the changes it created to working patterns, for example, online meetings.

Figure 5 shows that emissions from business travel remain much lower than pre-COVID-19 levels but are showing an increase as we move out of lockdown.

In Q1 2021-22, six domestic flights were taken by Social Services for client work. Travel by rail and by car (staff millage in their own vehicles, taxis and car clubs) is slightly higher than last quarter in response to the easing of lockdown restrictions.

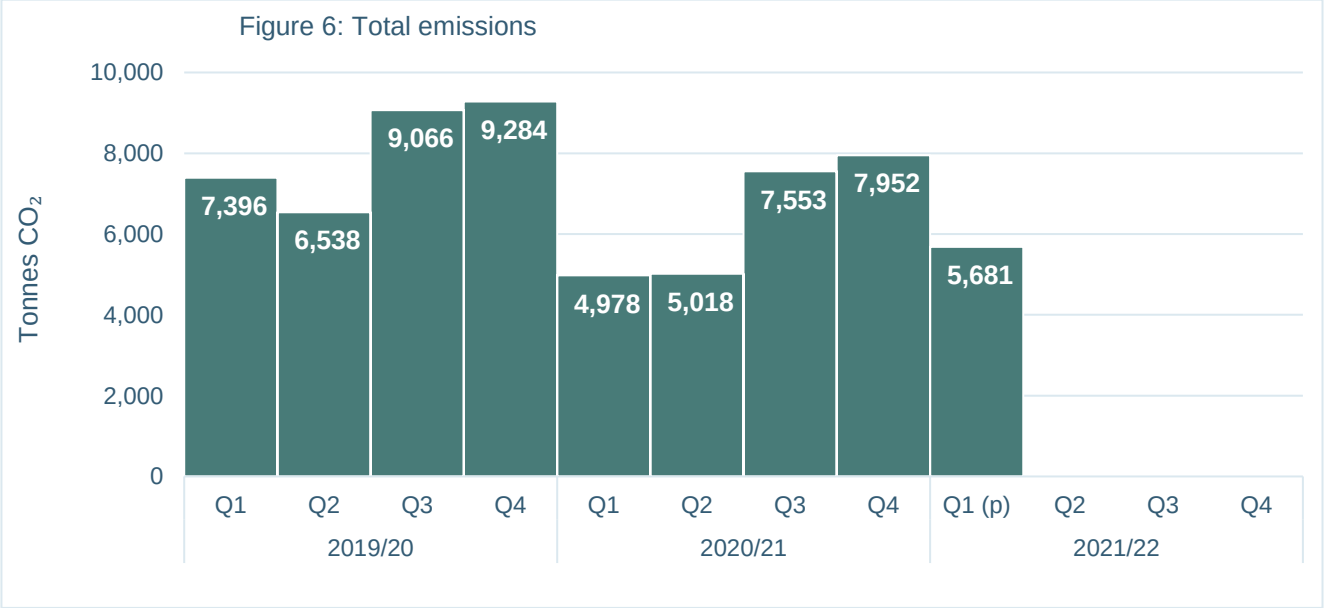
Figure 5: Business travel emissions



Going forward we expect business travel to continue to increase; however, we also expect the Council's new Sustainable Travel Policy - which comes into effect shortly – must encourage modal shift as we recognise the need to keep the increase in carbon emissions to a minimum.

Figure 6 shows the Council's total emissions and reflects the overall downwards trend seen in Figures 1-5 above, alongside expected seasonal trends. Total emissions in Q1 2021-22 are 23% lower than for the same period in 2019-20 (pre COVID-19).

Figure 6: Total emissions



Manchester Climate Change Action Plan 2020-25
Progress Update Q2 July – September 2021

Key Performance Indicator Spotlight:

Single Use Plastics at Events:

Research based on six Manchester events that took place in 2018 and 2019 shows that by switching away from single use to reusable bar cups, these events:

- Avoided using 1.7 million single use plastic cups
- Reduced cup waste by an estimated 96% (~30 tonnes)
- Reduced CO_2e emissions by an estimated 82% (~90 tonnes)

The study also showed that adopting reusable cups at all of Manchester's outdoor events could save a further 1 million single use plastic cups per annum from entering the waste stream, avoiding a further 20 tonnes of plastic waste, and preventing over 57 tonnes CO_2e emissions, each year.

Manchester City Council has committed to being single use plastic free by 2024 and has made changes across its operations in support of this goal which are detailed in previous quarterly reports.

Progress Report Headlines:

Key Achievements:

- 14 new electric refuse collection vehicles are now operational, with a further 13 expected to be delivered by the end of 2021.
- 19% of the Council's operational fleet that can be replaced with electric alternatives are now electric vehicles.
- £173k has been secured from the Energy Savings Trust to fund the purchase of 26 e-cargo bikes and 6 e-cargo trailers; 12 bikes / 3 trailers for the Council, 6 bikes / 2 trailers for five Manchester VSCE partners and 8 bikes / 1 trailer for a bike hire scheme.
- £325k has been secured from the Department for Transport's Active Travel Capability Fund, to produce an Active Travel Strategy and develop potential schemes.
- The Greater Manchester Clean Air Plan has been approved and will come into effect in May 2022, with funding available to upgrade or replace vehicles from November 2021.
- West Gorton Park has won two awards: a 'Golden Pineapple' Award from the Festival of Place and Highly Commended in the Environment Agency's Flood and Coastal Resilience Awards.
- Manchester Climate Change Partnership launched a Net Zero Carbon New Build Policy.

New Risks and Issues:

- Solar carports at the National Cycling Centre may be delayed as contractors are using the car park space for storage and access. Meetings are ongoing to seek a resolution.
- Manchester City Council's housing stock may not meet the eligibility criteria for the government's Social Housing Decarbonisation Fund, which opens next quarter, as it targets properties with an EPC rating below D and the majority of Council stock is rated C or above.

Manchester Climate Change Action Plan 2020-25
Progress Update Q2 July – September 2021

Seeing is Believing: Community Engagement

Manchester Youth Council's Climate Wheel was distributed last quarter, along with education packs, to 183 education providers and 197 voluntary youth organisations, and was followed up this quarter by a series of events to promote it to residents.

One event was held in Platt Fields Park with the Manchester Urban Diggers group as part of the Skills for Life training. These young people are all Manchester Youth Council members and Climate Wheel Champions.

Separate to this, 'In Our Nature' delivered a series of workshops in partnership with Sow the City, and in collaboration with local groups, to help new audiences engage with nature on their doorstep.

During August, residents engaged in decorating swift boxes, harvesting vegetables, and making bird feeders from oats, oranges and seeds, which have been hung around Moss Side gardens. A nature mural was also created using illustrations of local wildlife coloured in by the younger residents.

The 'In Our Nature' programme also opened its first Community Fridge in Moss Side. The fridge allows for the community, including local businesses and producers, to share surplus food, aiming to cut down food waste and bring local communities together.

Progress Report by Workstream: (by exception)

Buildings and Energy (Workstream 1):

1.1 The Public Sector Decarbonisation Scheme (PSDS) detailed design work is complete, and contracts will be awarded by mid-October. The contract period closes in March 2022 and there is an ongoing risk that some delivery may potentially not meet the deadline. This is being closely monitored. These works to decarbonise heat and increase renewable energy generation capacity will be carried out in 12 Council buildings including the Town Hall Extension, the Aquatics Centre, National Cycling Centre, Arcadia Library & Leisure Centre, East Manchester Leisure Centre, Hough End Leisure Centre, Moss Side Leisure Centre, North City Family & Fitness Centre, Wythenshawe Forum, Sharp Project, Space Project and Zion Arts Centre.

On the Unlocking Clean Energy Project, consultants have developed the specification for the works at the National Cycling Centre. There is an issue with access to the carpark area for the installation of the solar photovoltaic (PV) car ports and this is being closely monitored.

The Estates Programme (Phase 1) has three sites left to complete and are on schedule for the end of the financial year. The installation of solar PV is on site at the Sharp Project and the LED detailed design is complete subject to approval. The Space Project solar PV design is being finalised. The LEDs are in design for Bellevue Leisure Centre. Whilst the Football and Tennis Centre is still in use as a vaccine centre, solar PV's have been installed and will be connected, along with the installation of LEDs as access permits. The buildings are: Wythenshawe Forum, Town Hall Extension, East Manchester Leisure Centre, The Sharp Project, Space Project, Hough End Leisure Centre, Arcadia Sports Centre, Moss Side Leisure Centre, North City Family & Fitness Centre, Belle Vue Sports Centre and Manchester Tennis & Football Centre.

The HydroZero boiler at Gorton Library has been fully commissioned and is operational. The technology is an early development and the delivery company need to build capacity to develop a market ready product.

1.6 A Civic Quarter Heat Network (CQHN) site visit took place with the non-executive directors on 3rd August. Contracts with Manchester Heat Network TradeCo Limited, who will operate the facility on behalf of the Council, have been finalised. Gas connectivity experienced delays and is now scheduled for late September.

1.7 A funding submission is being prepared and will be presented to the Strategic Capital Board before the end of 2021-22 with the funding opportunities anticipated post COP26.

1.8 The Social Housing Decarbonisation Fund Demonstrator (SHDFD) change request for an extension has been agreed. Financial closure will now be 31st March 2022 with works to complete by 30th June 2022. Work is proceeding on 160 One Manchester properties with a 70% take up for heat pumps. On the 8th October, Lord Callanan, the Minister for Business, Energy and Corporate Responsibility, will be making a site visit.

Government has announced a Social Housing Decarbonisation Wave 1 fund, with the intention to utilise the learning from the demonstrator projects, but the timescales conflict with Wave 1 launching ahead of the demonstrator projects completing. The criteria targets properties below EPC Band C, ideally E and F, however Manchester has very few social housing properties in this category due to housing providers upgrading properties following stock transfers. Conditions of the new scheme are being reviewed.

1.12 Manchester Climate Change Partnership's, "Roadmap to Net Zero Carbon New Buildings in Manchester" was published in August. This sets out a proposal for all new buildings in the city to be zero carbon from 2023, without offsetting or a carbon tax. This will be incorporated into the Local Plan process.

Travel and Transport (Workstream 2):

2.1 There are now 14 electric refuse collection vehicles operational. The remaining 13 are expected by the end of November 2021.

2.2 A further 9 electric vehicles (EVs) were added to the fleet this quarter (8 vans and 1 people carrier), as part of the rolling replacement programme, bringing the total to 35 EV's and 3 hybrid vehicles. Currently, 201 vehicles have an electric equivalent meaning that 19% of the fleet is now electric. There are 22 specialist heavy goods vehicles in the fleet, which there is currently no non-ICE (Internal Combustion Engines) alternative on the market. The number of vehicles in the fleet commonly fluctuates by +/-5% depending on service need.

A bid to the Energy Savings Trust's eCargo Bike Local Authority Scheme was successful. An award of £173K will provide 26 eCargo bikes and six eCargo trailers. A number will form part of the Council's operational fleet as well as supporting the two universities and five VCSE organisations along with a 'bike library' for short-term lease.

2.3 The Sustainable Travel Policy has undergone a process of review and will be presented to the Personnel Committee on 20th October. As a result of the work on the policy, a car club vehicle is now

available at Etrop Court, Wythenshawe, and messages to encourage active travel is included in all staff communication channels.

2.4 The Council has secured £325K funding from the Department for Transport's (DfT) Active Travel Capability Fund, to produce an Active Travel Strategy and develop potential schemes. Business cases are being worked up.

A submission was made via Transport for Greater Manchester (TfGM) to the DfT Active Travel Fund Round 3 for £4.4m to fund improvements to Alan Turing Way, High St/Fountain St traffic free streets and Medlock St scheme development. Two of our development asks have been deprioritised: £350k for Wythenshawe and £1.25m for Oldham Rd.

2.5 In September, TfGM, on behalf of the 10 Greater Manchester districts, submitted a bid to Government for a 5-year transport funding settlement under the £4.2bn Intra-city Transport Fund. The bid contains a range of schemes for active and public transport infrastructure in Manchester and will support the reduction of carbon emissions from transport.

The Greater Manchester Clean Air Plan was approved by the 10 Greater Manchester districts in July.

The Council is continuing to roll out EV charging infrastructure as funding becomes available, including through the Greater Manchester Clean Air Plan taxi charging and Government's On-Street Residential ChargePoint Scheme. Following input from the districts, TfGM launched a draft Greater Manchester EV Charging Infrastructure Strategy in September.

Beryl was chosen as the preferred supplier for the Greater Manchester Cycle Hire scheme. The Council is working with TfGM and Beryl to approve the locations for ~35 docking stations along the Oxford Road Corridor. The first bicycles and docking stations will be seen along Oxford Road during next quarter.

In July, the Greater Manchester Combined Authority (GMCA) announced the first stage of a minimum licensing standards for Greater Manchester taxis. This covers vehicle emission standards of Euro IV for petrol engines and Euro VI for diesel from 2021, with a road map to reducing harmful vehicles emissions and the aim of a zero-emission capable fleet by 2029. This will support the city regions Clean Air Plan.

2.7 Manchester Airport Group (MAG) was listed in the Financial Times Europe Climate Leaders as one of 300 companies that achieved the greatest reduction in their greenhouse gas emissions intensity between 2014 - 2019. This takes account of Scope 1 and Scope 2 emissions i.e. those directly produced by the company and those produced in generating the energy used by the company.

MAG is part of the UK Government 'Jet Zero' group. A consultation was launched in July 2021 ahead of the development of a Jet Zero Strategy - www.gov.uk/government/consultations/achieving-net-zero-aviation-by-2050.

2.8 Regular messages about discounted public transport tickets are being communicated through staff bulletins. Cycle September is also being promoted and prizes for Council staff have been secured from TfGM. A review of Council cycle facilities is underway.

Reducing Consumption-based Emissions (Workstream 3):

3.1 The number of tenders, including the 10% environmental weighting is increasing, examples include two contracts for the Etihad, the contract management system, 'Future Shape of Core' consultancy, and 'This City' procurements. The Integrated Commissioning and Procurement Team have continued to engage with services and Contract Leads across the council to raise awareness and provide support with implementing the new 10% environmental weighting. As a key partner in the Manchester Local Care Organisation, we are contributing to the development of their commissioning plan, which builds social value including zero carbon as an integral part. This will impact on all future Adult Social Care and Commissioning contracts within the Council.

3.2 A key recommendation from the Tyndall Centre for Climate Change research relates to emissions from areas of imported consumption, i.e. estimating emissions associated with particular

goods and services categories and taking steps to reduce them. We plan to refine the original action to focus on specific hotspot areas over the coming year. The Integrated Commissioning and Procurement Team are in discussion with government and also with Core Cities to look at the can best approaches.

3.4 Accompanying guidance for the Supplier Toolkit has been developed and has been shared with the Business Growth Company for feedback. Work is also underway with the Business Growth Company to explore how we can promote their free support offer to Manchester SMEs.

3.5 Large scale events recommenced this quarter following COVID-19 restriction easing. The key focus areas for events are still to reduce Single Use Plastics (SUP's), particularly for food and drink trader cups and sustainable power supply. In Q1, a report was commissioned to research the use of SUP's across previous Council events. This internal work is now complete and outlines the Council's achievements from previous events, future recommendations, and guidance on how organisers can reduce SUP's. The report is undergoing peer review. A bid to the EU City Facility fund was submitted to fund a feasibility study into the upgrade of mains power at event sites but was not successful. Re-submission is being considered.

3.6 Engagement is being maintained between the Our Manchester (OM) Food Partnership and the Manchester Food Board, with the Council's Food Response Lead attending the Manchester Food Board and the Manchester Food Board Chair attends the OM Food Partnership meetings. A bid to the Our Manchester Investment Fund has been submitted to fund additional resource to strengthen links between the Manchester Food Board and OM Food Partnership. The Council's Food Response Lead is also working with Greater Manchester Food Operations Group to ensure best practice and regional resources are being shared.

Climate Change Adaptation and Carbon Sequestration (Workstream 4):

4.1 Work continues to protect the trees planted to date with watering programmes in place. The next tree planting season begins in October.

4.2 West Gorton Park won a 'Golden Pineapple' Award from the Festival of Place and was highly commended in the Environmental Agency's Flood and Coastal Resilience Awards. The Council's Highways team have been invited to an information and learning exchange session with Salford Council's Highways department, using West Gorton to discuss how more sustainable drainage system schemes could be implemented.

4.3 Finalising the Tree Opportunity Mapping report has been impacted by resourcing. The final report is now expected by the end of October. This will inform the next planting season.

4.4 Planning is now taking place for phase two of the planting programme to begin in October. Over 800 locations have been identified and these are currently being assessed. A call to establish the new community orchards will be issued late September. A bid to DEFRA's Urban Tree Challenge Fund has been submitted by City of Trees, to support the next phase of the planting programme.

Catalysing Change (Workstream 5):

5.1 Carbon Literacy training continues to be delivered. 1132 council staff and 39 members are certified carbon literate, taking account of staff who have left the organisation. 57 staff from Greenwich Leisure Limited and Manchester Active are also certified carbon literate, as a result of training delivered by the Council's Carbon Literacy trainer. Supporting partners to become carbon literate is one of the Gold accreditation criteria.

5.3 Carbon data is now reviewed at all stages within the decision-making process for capital programmes and work has begun to identify suitable metrics to support ongoing measurement of carbon impact. Further embedding carbon into the full range of decision-making structures is a key focus of the Future Shape of the Council core activity.

5.4 To ensure a consistent approach, the Climate Change Neighbourhood Officers have developed a template for capturing climate action within ward plans. These will be completed for all wards by the end of the year. A secondee from Groundwork started in post in September and will focus on the nature-based solutions activity over the next 11 months.

Six pilot areas: Hulme, Levenshulme, Moss Side, Newton Heath and Miles Platting, the Northern Quarter, and Rusholme are the focus of the 'In Our Nature' programme. Resident groups have been established through local workshops run by Amity. The Arrowfield Estate decarbonisation project, being delivered in partnership with Southway Homes, has also been added into the In Our Nature project. In Our Nature Community Assembly sessions were rolled out over the summer, involving 5 local groups. Mandates were developed as part of these sessions, which will be presented to Councillors and Neighbourhood Officers late September. The outcome of this work will be taken to COP26 in November.

5.5 The Communications team have been working on updating content on the zero carbon pages of the Council's website, making sure the content is correct and up to date, working with the Zero Carbon Team to produce accessible reports for the website and working through a coherent structure for the web pages. A copywriter has been commissioned to support with the content creation.

5.6 Several roles at the Manchester Climate Change Agency (MCCA) have now been filled. A Policy & Strategy Lead commences in post from September and a new Director of the Agency will start on the 1st October. A Deputy Director will be recruited in the autumn. The total number of posts will increase to eight, with five posts being funded by the Council in 2021-22.

5.7 Manchester Climate Change Partnership (MCCP) launched their Net Zero Carbon New Build Policy Document this quarter, setting out a proposal for all new buildings in the city from 2023 to be zero carbon.

5.9 The Chair of the Environment & Climate Change Scrutiny Committee has written to the Greater Manchester Pension Fund regarding divestment. MCC representatives continue to engage in all relevant meetings at elected member and officer level.

5.10 Manchester is involved in a range of projects with the highest profile being the UK Cities Climate Investment Commission, which will report its findings at COP26. There is also ongoing engagement via Greater Manchester, the North West and directly with Glasgow.

5.11 Anthesis have been procured as part of the Zero Carbon Cities project to support the Council and MCCA to carry out the refresh of the Climate Change Framework 2.0 and develop Manchester's Implementation Plan for the Zero Carbon Cities project. The MCCA are managing a €10,000 budget allocated for delivery with the help of Envirolution. This small-scale action will be a series of community workshops to formulate a citizen's response to the climate emergency as part of the 'In Our Nature' programme. A workshop for Manchester stakeholders on Manchester's Integrated Action Plan was held in September.

Whilst the Grow Green projects continues, officers are looking more broadly at funding opportunities within the Horizon Europe Programme.

5.12 A draft high-level Green Skills Plan was developed in consultation with Greater Manchester Combined Authority and Local Green Skills Partnership Group. Early findings were reported into the MCCP Further work continues to develop a tangible work programme and key performance indicators, which will inform the Work and Skills Strategy refresh.

Manchester Climate Change Action Plan 2020-25
Progress Update Q2 July – September 2021

Press Coverage July - September 2021:

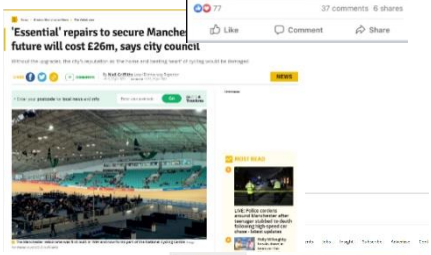
Fallowfield Loop consultation/investment

06 July
About Manchester: Next stage of consultation over Fallowfield cycle route is launched
https://aboutmanchester.co.uk/107282-2/

Place North West: Final consultation on future of Fallowfield Loop
https://www.placenorthwest.co.uk/news/final-consultation-on-future-of-fallowfield-loop/

MCC Facebook page: Plans for the Fallowfield Loop
https://www.facebook.com/pg/mancitycouncil/posts/?ref=page_internal

National Cycling Centre



22 July
MEN: Essential' repairs to secure Manchester Velodrome's future will cost £26m, says city council
https://www.manchestereveningnews.co.uk/news/greater-manchester-news/essential-repairs-secure-manchester-velodromes-21117554

Manchester Net Zero Carbon New Build Policy

26 August
Place North West: Manchester considers net zero new build rule by 2023
https://www.placenorthwest.co.uk/news/manchester-considers-net-zero-new-build-rule-by-2023/

Manchester's Finest: Manchester to adopt Net Zero Carbon for ALL new Manchester buildings?
https://www.manchestersfinest.com/articles/manchester-to-adopt-net-zero-carbon-for-all-new-buildings/

27 August
Construction Enquirer: Manchester considers net zero new builds by 2023
https://www.constructionenquirer.com/2021/08/27/manchester-considers-net-zero-new-build-by-2023/

Social Housing

06 September
Place North West: Manchester City Council commits £15m low carbon investment to 300 homes in Newton Heath and Blackley
https://www.placenorthwest.co.uk/news/manchester-commits-15m-to-make-council-homes-sustainable/

07 September
About Manchester: £15m low carbon investment in 300 homes in Newton Heath and Blackley
https://aboutmanchester.co.uk/15m-low-carbon-investment-in-300-homes-in-newton-heath-and-blackley/

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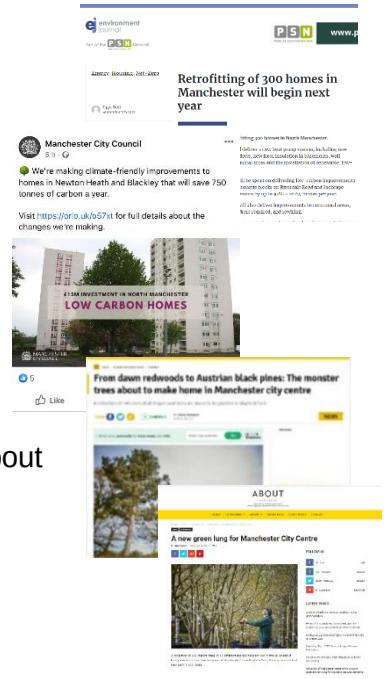
Environmental Journal: Retrofitting of 300 homes in Manchester will begin next year
https://environmentjournal.online/articles/retrofitting-of-300-homes-in-manchester-will-begin-next-year/

MCC Facebook page: £15m investment in North Manchester
https://www.facebook.com/mancitycouncil/?hc_ref=ARSV_zOQGEwqb1WDnfb4XSQmlGro5LVWP9wfLOqGK4nkdZE6t6tKo6jF-Rvs621C5Yk&fref=nf&__tn__=kC-R



Mayfield Park

12 September
MEN: From dawn redwoods to Austrian black pines: The monster tress about to make home in Manchester city centre

https://www.manchestereveningnews.co.uk/news/greater-manchester-news/dawn-redwoods-austrian-black-pines-21522111

14 Sepember
About Manchester, a new green lung for Manchester city centre
https://aboutmanchester.co.uk/a-new-green-lung-for-manchester-city-centre/?utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=

RAG Rating at a Glance:

The actions in the following tables, that will deliver reductions in the Council's direct energy-related emissions have a specific Annual tCO_2 Saving Target. These actions are set to reduce emissions by 50% by 2025 (i.e. delivering a total annual reduction of over 15,000 tonnes) which is a headline commitment of the Action Plan. Detailed progress on emissions reductions is shown at the start of this report.

Workstream 1: Buildings & Energy

RAG	Action Summary	Deadline	Annual tCO_2 Saving Target
1.1	MCC Estates carbon reduction programme	March 2025	4,800
1.2	Manchester Build Standard	December 2020	-
1.3	Buildings and Energy Strategy	April 2020	-
1.4	Large scale renewable energy generation	December 2020	7,000
1.5	LED street lighting	December 2020	220
1.6	Civic Quarter Heat Network	2021	1,600
1.7	Housing stock condition survey	2021	-
1.8	Northwards Housing	Tbc	Tbc
1.9	Commercial and non-domestic buildings	Ongoing	Tbc
1.10	Local Energy Plan for Manchester	April 2020	-
1.11	Leasing and disposing of Council buildings	April 2020	-
1.12	Manchester Local Plan	2023	-
1.13	Partnerships e.g., UKGBC	Ongoing	-

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Workstream 2: Travel & Transport

RAG	Action Summary	Deadline	Annual tCO_2 Saving Target
2.1	Electric refuse collection vehicles	March 2021	900
2.2	Replace operational fleet with EVs	Ongoing	400
2.3	Travel policy for staff and members	April 2020	100
2.4	Cycling and walking networks	Ongoing	
2.5	Greater Manchester Transport Strategy 2040	Ongoing	
2.6	City Centre Transport Strategy	2020 & ongoing	
2.7	Aviation emissions and Manchester airport	Ongoing	Tbc
2.8	Sustainable travel incentives	Ongoing	

Workstream 3: Sustainable Consumption

RAG	Action Summary	Deadline	Annual tCO_2 Saving Target
3.1	10% environmental weighting in procurement	September 2021	
3.2.	Tyndall Centre findings on consumption emissions	December 2020	Tbc
3.3.	Eliminate single use plastics in estates and markets	2024	
3.4	Supplier toolkit	December 2020	
3.5	Single use plastics in licensed activities	December 2020	
3.6	Manchester Food Board priorities	Ongoing	

Workstream 4: Adaptation & Sequestration

RAG	Action Summary	Deadline	Annual tCO_2 Saving Target
4.1	Plant 1,000 trees 1,000 hedge trees 4 orchards pa	Ongoing	
4.2	West Gorton 'sponge park'	Ongoing	
4.3	Tree opportunity mapping assessment	December 2020	
4.4	Funding for beacon trees	March 2021	

Workstream 5: Catalysing Change

RAG	Action Summary	Deadline	Annual CO_2 Saving Target
5.1	Carbon literacy	2025	
5.2	10% environmental weighting in procurement (see 3.1)	April 2020	
5.3	Carbon accounting in decision making	Ongoing	
5.4	Community engagement and ward plans	April 2020	
5.5	Citywide communications strategy	April 2020	
5.6	Fund Manchester Climate Change Agency	April 2020	
5.7	Support Manchester Climate Change Partnership	December 2020	
5.8	Large scale event with schools	June 2020	
5.9	Influence GM stakeholders to decarbonise	Ongoing	

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5.10	Play a part in COP26	November 2020	
5.11	International networks and projects	Ongoing	
5.12	Green Skills Plan	September 2020	
			15,020

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Manchester City Council
Report for Information

Report to:	Environment and Climate Change Scrutiny Committee – 14 October 2021
Subject:	Development of Climate Change Framework 2.0 – Update on Consultation and Development of the detailed Action Plan
Report of:	Manchester Climate Change Agency

Summary

This report provides an update to the Committee on progress in developing an updated Climate Change Framework for the city (Framework 2.0). It reviews the responses to the first round of consultation with communities and businesses that will help to inform the Framework and summarises the emerging objectives and proposed actions required to deliver the scale of carbon reduction required across the city. The Framework is intended to provide a more detailed definition of the urgent actions required across the city if Manchester is to remain within its adopted carbon budget and remain on track to be a zero-carbon city by 2038 at the latest.

Recommendations

1. To note the conclusions of the deliberations of the Community Assembly process and the first round of consultation with Manchester residents and businesses.

2. To note and comment on the emerging objectives by theme in section 4 of the report that will be subject to further consultation.

3. Request a further report to the Committee to enable comments to be made on the detailed content of the Draft Framework prior to its submission to the Executive in 2022.

Wards Affected: All

Environmental Impact Assessment - the impact of the issues addressed in this report on achieving the zero-carbon target for the city
The Manchester Climate Change Framework 2020-25 has the aim of ensuring that 'Manchester will play its full part in limiting the impacts of climate change and create a healthy, green, socially just city where everyone can thrive.' It includes the carbon reduction objective: 'To ensure that Manchester plays its full part in helping to meet the Paris Agreement objectives by keeping our direct CO_2 emissions within a limited carbon budget, taking commensurate action on aviation CO_2 emissions and addressing our indirect / consumption-based carbon emissions.' This report describes the process that is being followed to refresh and further develop the Framework adopted in March 2019.

Manchester Strategy outcomes	**Summary of how this report aligns to the OMS**
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	The Framework includes the objective: 'To ensure that Manchester establishes an inclusive, zero carbon and climate resilient economy where everyone can benefit from playing an active role in decarbonising and adapting the city to the changing climate.'
A highly skilled city: world class and home-grown talent sustaining the city's economic success	The Framework includes the objective: 'To ensure that Manchester establishes an inclusive, zero carbon and climate resilient economy where everyone can benefit from playing an active role in decarbonising and adapting the city to the changing climate.'
A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	The Framework includes the objective: 'To improve the health and wellbeing of everyone in Manchester through actions that also contribute to our objectives for CO_2 reduction and adaption and resilience, with particular focus on those most in need.'
A liveable and low carbon city: a destination of choice to live, visit, work	The Framework includes the objective: 'To improve the health and wellbeing of everyone in Manchester through actions that also contribute to our objectives for CO_2 reduction and adaption and resilience, with particular focus on those most in need.'
A connected city: world class infrastructure and connectivity to drive growth	The Framework's 'Transport and Flying' section sets out five headline actions: 'Increase walking and cycling; Increase public transport use; Private vehicles; Rail connections to other cities within the UK and Europe (and beyond); work with UK Government to ensure that flights from Manchester Airport and all UK airports are fully in line with the Paris Agreement.'

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Name: Richard Elliott
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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

Manchester Climate Change Framework 2020-25
https://www.manchesterclimate.com/framework-2020-25

Manchester Climate Change Annual Report 2020
https://www.manchesterclimate.com/progress

1.0 Introduction

1.1 The Manchester Climate Change Partnership brings together organisations from the city's public, private, community, faith, education and academic sectors that share the common goal to achieve the ambitious objectives and targets in the Manchester Climate Change Framework 2020-25. The members of the Climate Change Partnership are held to account for the progress that they are making in delivering reductions in emissions within their own organisations The Partnership seeks to provide leadership and influence for the city by emphasising that addressing climate change is the responsibility of all organisations and individuals in the city and should not be seen as only the responsibility of the Council and the wider public sector.

1.2 The Climate Change Agency's role is to work with the organisations represented on the Partnership and with the wider community to ensure that Manchester develops and successfully implements a city climate change strategy that is consistent with the Paris Agreement.

2.0 Developing an Updated Manchester Climate Change Framework – Framework 2.0

2.1 Members will be aware that Manchester was one of the first cities to adopt science-based carbon budgeting. For direct emissions, Manchester has set a carbon budget of 15 million tonnes for 2018-2100. This means Manchester needed to reduce its direct carbon emissions by at least 13% per year over this period, 50% during 2020-25, en-route becoming a zero-carbon city by 2038, at the latest. The key challenge is to ensure that specific actions are developed across different sectors to deliver the target.

2.2 The Climate Change Partnership has been given the role of developing and facilitating the delivery of Manchester's strategy to ensure it plays its full part in limiting the impacts of climate change. Version 1.0 of the Manchester Climate Change Framework 2020- 25 was published in February 2020 and was formally endorsed by the City Council in March 2020. Version 2.0 of the Framework for 2020-25 including a new Implementation Plan are being produced during 2021 to provide more detail of what actions across all sectors need to be taken to achieve the level of carbon reduction required.

Framework 2.0 will have 5 key components:

1. Overall Aim and Ambition
2. Headline objectives: CO2 reduction, climate adaptation and resilience, health and inclusive economy
3. Thematic Objectives: buildings, renewable energy, transport, food, things we buy and throw away, green infrastructure and nature-based solutions
4. Bottom up – Actions for all residents and businesses
5. Top Down - Setting out an approach to removing barriers to action: included in the development of a detailed Implementation Plan

2.3 The City Council, working with MCCA, has procured Anthesis, an environmental consultancy, to support the development of the Framework and Action Plan. The process will involve the following stages:

- Development of thematic objectives and potential actions for residents and businesses
- Consultation 1 with residents and businesses asking them “What actions are you already taking?” and “What barriers are preventing you from taking further actions?”
- Development of a Draft Implementation Plan
- Consultation 2 on Draft Implementation Plan – “Are these the right actions to remove your barriers to taking action?”
- Final Framework Published (January/February 2022)
- Formal approval by MCCP and the City Council (March 2022)

2.4 Science based targets will determine the pace of change required. Consultants will define these for different sectors, recognising that progress is likely to be faster in some areas than in others. The actions will be focused on the following key themes:

- Buildings
- Renewable energy
- Transport
- Food
- Things we buy and throw away,
- Green infrastructure and nature-based solutions

2.5 For each theme the aim is to develop Specific, Measurable, Achievable, Realistic and Time Bound (SMART) objectives. The objectives will be accompanied by a list of specific actions that will signpost Manchester people, businesses and other organisations to take the actions required.

2.6 The aim is that the Framework and Implementation Plan will provide the city with a clear set of actions that will, if taken, reduce emissions by the required amount by 2025 to ensure that the city stays within its carbon budget and remains on track to become a zero-carbon city by 2038 or earlier. Throughout this process the intention is to identify and remove barriers to action, to enable citizens and businesses to take the measures that are required. In overall terms the Framework is intended to further support efforts to position the city as a leader, both nationally and internationally, in the response it is taking to mitigation, adaptation and resilience. As a result, the objective is that through these actions the city will be seen as a better place to live, work, play and invest in because of the progressive approach it is taking to this key global challenge.

2.7 It is important that the Committee are able to contribute to this work at key stages of the Framework’s development. A further report will therefore be brought back to the Committee in the New Year following the second round of public consultation, and prior to the Framework being considered by the Executive.

3.0 Involving Manchester Communities and Businesses - Update

3.1 The refreshed Framework is being developed together with Manchester residents and businesses. A first stage consultation has taken place over the summer and has involved the convening of Climate Assemblies in five areas of the city (Levenshulme and East, City Centre and North, Moss Side and Hulme, Wythenshawe and South, Whalley Range and Chorlton). These have come together to produce a joint mandate. Alongside this online questionnaires have gathered information on:

- the actions residents and businesses are already taking;
- what they would like to do more of but are currently unable to act on; and
- the barriers that individuals are currently facing to taking more action.

3.2 More detail on the responses obtained from these exercises is contained below.

Community Assembly

3.3 There are a number of communication objectives as part of the In Our Nature programme of community engagement, these are:

- Be Inspired (e.g., through the stories we love and social media)
- Have your say (e.g., join the community assembly, complete the Questionnaire)
- Get involved (e.g., in our projects and campaigns)
- Act now! (e.g., use our resources, join a group, make a plan)

3.4 The Community Assembly and the Consultation Questionnaire provided mechanisms for residents and communities to have their say on the 3 questions outlined above, and both are feeding directly into the development of Framework 2.0 by providing a narrative and a “Mandate” of actions for the city to act upon.

3.5 Over a 7-week period this summer, 65 residents from across the city came together to talk about climate action, hear from a panel of experts and to debate and vote on the actions for the city to create a “Citizens Mandate on Climate Action” for Manchester.

3.6 The Assembly forms part of “In Our Nature” a city-wide programme aiming to unlock the potential of residents and communities to act on the climate emergency. Workshops were held in 5 locations across the city, following a recruitment drive earlier in the summer.

3.7 The Manchester Community Assembly was organised by Bob Walley from local environmental education cooperative Envirolution (www.envirolution.org.uk) and the Manchester Climate Change Agency (www.manchesterclimate.com) together with other local partners including Manchester City Council.

3.8 Residents heard from a range of experts including representatives from the Tyndall Centre for Climate Change Research, University of Manchester, Climate Psychology Alliance, Anthesis, Manchester Food Board, Red Cooperative, Manchester Fashion Movement, Walk Ride Greater Manchester, and many others.

3.9 Together, the participants and expert facilitators created action plans for their areas, which explore the most relevant and appropriate action for individuals and community groups to take. Each area then shared these with the other groups to see what could be achieved at a city-wide level.

3.10 Importantly, the residents also identified those actions where they felt unable to progress without the support of others. They identified government, Manchester City Council, TfGM, utility companies and businesses as key to making the infrastructure and policy changes needed to achieve the 50% carbon reduction targets and tackle the climate emergency. These were written into the final "Citizens Mandate"

3.11 Suggested actions include:

- Rapid push towards locally generated renewable energy with storage batteries for things like electric cars,
- A new climate friendly labelling scheme for our food,
- Manchester as a Palm Oil free city,
- Pedestrianisation of Manchester City Centre,
- Local hub energy efficiency advice and information on financing retrofitting,
- A green jobs scheme to train local people to support the retrofit programme for our homes,
- More initiatives that encourage greener and more connected neighbourhoods, where people are happier to walk or cycle and feel safe and supported to do so.

3.12 Finally, the residents voted on what the artistic representation of the Mandate would be. They agreed on a Manchester Green Bee, symbolising the same industrious city but with our zero carbon aims and resilience at its heart.

Climate Change Mandate Actions and the Green Bee 

3.13 In November 2021, the Citizens' Mandate will be taken to the international COP26 Climate Change Conference in Glasgow, along with an Impact Assessment Report of the process and a film capturing the process, where it will be presented to delegates and groups from across the world with the help of the COP26 Coalition. The report is due to be completed by 29 October 2021.

3.14 Transparency is one of the project's priorities and as such, all materials, and findings collected so far are available at: https://zerocarbonmanchester.commonplace.is/proposals/in-our-nature-community-assembly/step1

Resident and Community Questionnaire

3.15 The initial consultation on the Framework has been designed to ask people "What actions are you already taking?" and "What barriers are preventing you from taking further actions?"

3.16 Part 1: The first part is an exploration of residents' attitudes to climate and ecological issues, recording what actions people are currently taking on several themes, that are being developed as part of the city's refreshed climate change action plan – Framework 2.0.

3.17 Themes included: energy in our homes, transport, food, things we buy and throw away, green spaces and nature and engaging and empowering others. Adaptation, resilience, and Nature Based Solutions (NBS) were identified as a gap in knowledge in the initial desk-based analysis, and so questions also explored future impacts of climate change in residents' local area and if people thought climate change would affect their homes, family, and daily activity.

3.18 Part 2: The second part of the survey explores attitudes to key barriers that are stopping people from doing more at an individual level and include things like lack of money, time to do it, as well as wider policy and infrastructure barriers.

3.19 The survey goes onto ask through "open text" boxes what more support people need to act in climate change. This is nuanced with suggestions of systemic and infrastructure actions that would allow residents to act on climate change more easily – such as funding to fit renewable energy in homes, and more locally grown plant-based foods in local neighbourhoods.

3.20 At the time of writing, there were 91 responses to the online survey at https://zerocarbonmanchester.commonplace.is/proposals/have-your-say/step1

3.21 It should be noted that although there has been distribution and communications across the city, the data collected would suggest that respondents who have responded are informed and aware of the climate emergency.

3.22 The data suggests that residents are generally positive (57%) about the city's aim to reduce emissions by 50% over the next few years.

3.23 Many residents are already doing many of the actions that are on the easier scale of action, may save money and are habit forming – switching to a green energy tariff, insulating homes, cycling, and walking more, eating less meat and dairy, recycling. The more expensive actions – such as retrofitting homes and switching to EV cars are not happening at scale, which is to be expected. Perhaps due to lockdown, people have said they are flying and commuting less.

3.24 The main barriers that people wish to see action upon are those that:

- Unblock the financial burden of acting, and
- Understanding more about how local people can impact and influence policy at a city and local level.

3.25 A full breakdown of the questions and results can be found in **APPENDIX 1**.

Business Questionnaire

3.26 Alongside a literature review and input from Member organisations and business support intermediaries a questionnaire has been developed and circulated to city businesses. At the time of writing the report 25 responses have so far been received from Manchester businesses. The responses are from 7 large companies and 18 SMEs.

3.27 While so far this is a small sample and cannot be said to be representative of the Manchester business community, the great majority of those organisations who have responded to date have indicated that tackling the climate emergency is a priority for their organisation and have already taken or are in the process of taking action.

3.28 The actions already underway include:

- adoption of staff travel policies aimed at encouraging more sustainable travel practices;
- measures to reduce energy use in buildings;
- engaging with landlords to seek to improve energy efficiency of buildings;
- switching some of their vehicle fleet to electric vehicles;
- increasing recycling rates.

3.29 Businesses are also being asked which factors have enabled them to take action as well as which barriers are preventing them from taking more action to address the climate emergency. A range of factors were cited but the three most common enabling factors were:

- leadership;
- customer demand; and
- support from Manchester City Council and/or the Climate Change Agency.

3.30 The three factors that were most often cited as preventing further action were:

- financial constraints;
- lack of capacity within the organisation; and
- lack of knowledge.

3.31 A fuller analysis of the results will be undertaken once more responses have been received and the response will help to inform the final actions contained in the Framework 2.0 document.

4.0 Draft Action Plan – Objectives

4.1 The intention is for Framework 2.0 to contain a list of detailed actions which, if implemented, will deliver the scale of change required to enable Manchester to decarbonise at pace and stay within its carbon budget. Achieving this will require a significant increase in both the pace of change and in the levels of investment required to deliver it. It will also require everyone in the city to play their part, supported by measures that make the necessary transition both possible and affordable.

4.2 Action will be required across all sectors but energy in buildings and transport make up the largest proportion of the city's current emissions and these will therefore need to see the biggest changes if the targets are to be achieved.

4.3 The following key objectives of the Action Plan which will be supported by more detailed and costed actions under each objective.

Buildings

- Improve the energy efficiency of commercial and domestic buildings
- Shift off gas heating systems
- Move towards more efficient cooking, lighting and appliances

Renewable Energy

- Increase solar PV capacity
- Explore other renewable energy technologies
- Increase capacity for renewable energy storage

Transport

- Increase the use of public transport, cycling and walking
- Reduce the need to travel
- Introduce more electric or hydrogen powered vehicles into the fleet
- Improve freight emissions
- Work with government and other cities/airports to reduce emissions from aviation

Food

- Increase plant-based diets
- Reduce per capita food waste

Things We Buy and Throw Away

- Reduce the quantity of waste
- Increase recycling rates

Green Infrastructure and Nature Based Solutions

- Increase the rate of tree planting
- Land use management

- Using green infrastructure to minimise risks of flooding and heat stress

5.0 Conclusions

5.1 The draft Implementation Plan is still being developed and will be subject to a round of public consultation later in the autumn. Following the feedback received, a final draft Plan will be published in the New Year and will be considered by the Climate Change Partnership prior to it being submitted to the Council. A report on the Draft Plan will be submitted to this Committee in the New Year prior to the consideration of the document by Executive.

6.0 Recommendations

6.1 Recommendations are at the front of this report.

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Have your say!

We asked residents and communities to tell us what they thought about how we can all help to reduce our carbon emissions and what is stopping them from doing more.

How?

An online consultation through the In Our Nature Commonplace https://zerocarbonmanchester.commonplace.is/proposals/have-your-say/step1 and paper surveys at relevant community events.

4,000 postcards directing people to the online survey via QR codes have been distributed to all neighbourhood libraries plus other places where people go such as community centres, hubs, and shops such as Asda Eastlands.

Copies have been translated into 5 main languages and posed on community Facebook pages (Urdu, Bangladesh, Chinese, Somali, and Arabic)

A social media campaign has posted links from the "In Our Nature" Twitter, Instagram, and Facebook pages. Posts have been shared across partners including all MCC Neighbourhoods Twitter accounts, MCCA, MCCP, Groundwork, Hubbub and Amity social media accounts.

The questionnaire opened online on Tuesday 14th September.

91 responses to the online survey had been received by 02nd October 2021

16 responses were collected at face-to-face events including:

- Rusholme Climate Summit on 28th September (10)
- Hulme Climate Summit on 29th September (6)

Why?

To inform the development of the city's climate change Framework 2.0 and provide insight into a climate action resident-led communication campaign to be developed as part of the In Our Nature campaign in 2022.

What?

Part 1: The first part is an exploration of residents' attitudes to climate and ecological issues, recording what actions people are currently taking on several themes, that are being developed as part of the city's refreshed climate change action plan – Framework 2.0. Themes included: energy in our homes, transport, food, things we buy and throw away, green spaces and nature and engaging and empowering others. Adaptation, resilience, and Nature Based Solutions were identified as a gap in knowledge in the initial desk-based analysis, and so questions also explored future impacts of climate change in residents' local area and if people thought climate change would affect their homes, family, and daily activity.

Part 2: The second part of the survey explores attitudes to key barriers that are stopping people from doing more at an individual level and include things like lack of money, time to do it, as well as wider policy and infrastructure barriers.

The survey goes onto ask through "open text" boxes what more support people need to act on climate change. This is nuanced with suggestions of systemic and infrastructure actions that would allow residents to act on climate change more easily – such as funding to fit renewable energy in homes, and more locally grown plant-based foods in their neighbourhoods.

Who responded?

- 51% women
- 45% male
- 12% are 16-25 years of age
- 58% are 26-49 years of age
- 25% are over 50 years of age

What did we find out?

Overall, 57% of people responding are positive when asked their opinion on the city's aim to reduce carbon emissions by 50% by 2025.

17% are neutral in their responses when asked their opinion on the city's aim to reduce carbon emissions by 50% by 2025.

24% are negative in their response to the city's aim to reduce carbon emissions by 50% by 2025.

Part 1: Which actions are residents doing the most?

Part 1 explored 6 thematic areas of action that residents could take, that relate directly to the thematic actions in the refreshed Framework.

Homes and energy actions

What action are residents doing the most?

- 61% have switched to renewable energy.
- 30% have insulated their home.
- 19% have put in a new gas boiler.
- 11% have installed renewable energy.

Sentiment

How do people feel about the city's aims to be zero carbon by 2025

(when asked at the end of the survey)

Residents who have installed a new gas boiler are the most positive

Residents who have installed renewable energy are the most negative

(when asked about ow they felt about the city's aims to be zero carbon at the end of the survey).

APPENDIX 1

#	Which of the following actions have you done or are you currently doing?	Sentiment
54	Switched to a renewable energy supplier	
27	Insulated my homes loft space and walls (cavity walls)	
17	Installed a new more efficient (gas) boiler	
5	Installed solar panels to generate electricity	
4	Installed exterior wall insulation and cladding	
1	Installed other renewable technology (e.g. air source heat pumps / ground source heat pumps)	
0	Installed thermal solar panels to heat water in my home	

Transport actions

What action are residents doing the most?

- 61% drive less and cycle/walk more.
- 51% work from home more.
- 43% chose not to fly as much.
- 25% don't have a car or use an EV car.

Sentiment

How do people feel about the city's aims to be zero carbon by 2025

(when asked at the end of the survey)

Residents who don't have a car are the most positive.

Residents who have bought an EV/Hybrid car are the most negative

(when asked about how they felt about the city's aims to be zero carbon at the end of the survey).

APPENDIX 1

#	Which of the following actions have you done or are you currently doing?	Sentiment
54	I drive less and cycle or walk more	
45	I work from home more and commute less	
38	I choose not to fly as often	
6	I loan a car when I really need to drive	
6	I have bought an Electric Vehicle or Hybrid car	
5	I have joined a car sharing scheme	
5	I have got rid of my vehicle	

Food and diet actions

What action are residents doing the most?

- 72% try not to waste food.
- 52% eat less meat and dairy.
- 46% buy locally sourced foods.
- 30% are vegetarian or vegan

Sentiment

How do people feel about the city's aims to be zero carbon by 2025

(when asked at the end of the survey)

Residents who are vegan are the most positive

(when asked about how they felt about the city's aims to be zero carbon at the end of the survey).

APPENDIX 1

#	Which of the following actions have you done or are you currently doing?	Sentiment
64	I try not to to waste food	
46	I eat less meat and dairy products	
41	I buy locally sourced foods where available	
38	I eat more plant based foods	
35	I buy food in season in the UK	
20	I am a vegetarian	
7	I am a vegan	

The things we buy and throw away

What action are residents doing the most?

- 73% recycle their waste.
- 51% avoid single use plastics.
- 47% buy eco/ethical brands
- 21% use an ethical bank

Sentiment

How do people feel about the city's aims to be zero carbon by 2025

(when asked at the end of the survey)

Residents score mostly positively across all actions

(when asked about how they felt about the city's aims to be zero carbon at the end of the survey).

#	Which of the following actions have you done or are you currently doing?	Sentiment
65	I recycle waste	
52	I buy fewer clothes and make them last longer	
45	I avoid single-use plastic	
44	I prefer to repair things when needed	
42	I buy eco and or ethical brands	
41	I buy less stuff less often	
19	I use an ethical bank	

Green Spaces and nature

What action are residents doing the most?

- 52% grow plants, food and leave green spaces.
- 46% make a home for nature.

Sentiment

How do people feel about the city's aims to be zero carbon by 2025

(when asked at the end of the survey)

- 34% are involved in National nature/wildlife campaigns
- 23% are involved in local campaigns

Residents score mostly positively across all actions, especially those involved in local campaigns (e.g. In Our Nature)

(when asked about how they felt about the city's aims to be zero carbon at the end of the survey).

#	Which of the following actions have you done or are you currently doing?	Sentiment
46	Grown plants and food and left green spaces.	
41	Made a home for nature by planting for bees and wildlife.	
30	Got involved in national nature or wildlife campaigns, like City of Trees, RSPB or National Trust	
47	Protected existing green spaces	
30	Got involved in local campaigns like In Our Nature	

Engaging and empowering others

What action are residents doing the most?

- 65% have learned about the climate emergency.

Sentiment

How do people feel about the city's aims to be zero carbon by 2025

(when asked at the end of the survey)

- 61% talk to others abut climate change.
- 19% have contacted their councillor about climate change

Residents who have contacted their councillor responded most negatively

(when asked about how they felt about the city's aims to be zero carbon at the end of the survey).

#	Which of the following actions have you done or are you currently doing?	Sentiment
58	I have learned about the climate emergency	
54	I talk to others about climate change and asking what we can all do	
29	I have joined a national or local campaign group	
27	I ask my local councillor and or politicians what they are doing	

Part 2: What do residents view as the reasons why they can't do more actions?

Barriers to action

What issues are the key barriers to residents taking more action?

- 52% said finance was a barrier to doing more.
- 45% said understanding local policy was a barrier to doing more.

Sentiment

How do people feel about the city's aims to be zero carbon by 2025

(when asked at the end of the survey)

- 45% said lifestyle barriers such as time and ease of action was a barrier to doing more.
- 32% said social issues such as a lack of collective action were a barrier to doing more.
- 32% said a lack of physical infrastructure was a barrier to doing more.

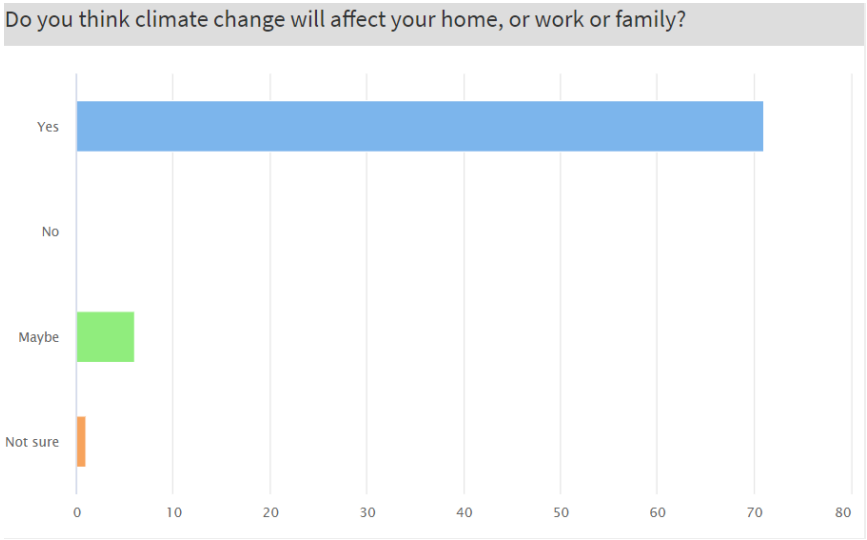
Those who thought that social barriers were most important climate barriers were the most positive (when asked about how they felt about the city's aims to be zero carbon at the end of the survey).

#	What are the key barriers stopping you doing more of this/these? Please select the top 2.	Sentiment
46	Budget barrier – financial constraints and money to do actions. – Are actions too expensive? Is there sufficient financial support available to make changes?	
40	Policy barriers – knowing if and how I can change or influence local or national policy. Do local policies and regulations (whether local, regional, and national) prevent you from delivering actions?	
40	Lifestyle barriers – time and ease of acting in my everyday life. Do your current obligations and routine prevent you from doing more?	
32	Social barriers – understanding what is required and that everyone understands, thinks the same and prioritises action. Are there big barriers preventing action and is there buy-in from the community?	
29	Physical barriers – changing things physically in my neighbourhood or area such as cycleways or pedestrianised roads. Does a lack of appropriate technology or local facilities prevent you from acting?	
9	Awareness barriers – being aware of the actions that make a difference to my carbon emissions and climate change. Do you understand the changes that are needed?	

People's concerns about how climate change will affect them.

81% of people are worried about the effect of climate change on their home, work, or family.

APPENDIX 1

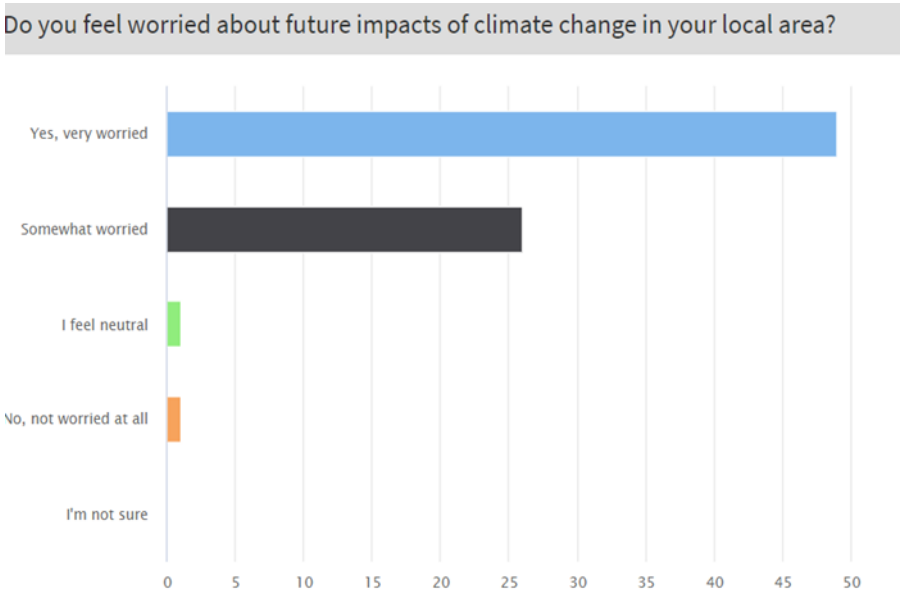


People's concerns about the future impacts of climate change in their local area.

55 % said they were very worried about the future impact of climate change in their local area.

29% are somewhat worried.

APPENDIX 1



Overall, what do people think about our aim to reduce carbon emissions by 50% by 2025?

Overall 57% of people responding are positive when asked their opinion on the city's aim to reduce carbon emissions by 50% by 2025.

17% are neutral in their responses when asked their opinion on the city's aim to reduce carbon emissions by 50% by 2025.

24% are negative in their response to the city's aim to reduce carbon emissions by 50% by 2025.

Why do people feel this way?

Positive comments

- Great progress is already being made.
- I think it is a start and I hope we can achieve it. I think it would have been great to have been able to reduce it to zero by the same date, but I understand that that is impossible.
- I hope if/when we achieve it, we can set another target to get to zero asp.
- I hope that our measures/action plan can influence other cities/countries as if we don't achieve this globally, we are all going to still feel the impacts of climate change.
- Thank you. The climate crisis feels overwhelming. Thank you for trying to do something positive.
- Setting a target is always a good idea even if it is not achieved.

Negative comments

- The aim is admirable. The likelihood of achieving it is low.
- I think you aim is very good but misguided. Many things should be done nationally. Your transport policy results in more pollution by causing cars to wait at traffic lights repeatedly-
- We are not on track and our leaders have not passed the policies needed to make this happen.
- So far, the progress has been very slow, so it's hard to trust this "aim".
- It is going to be too late. We need to be going as fast as we can. How many times do people have to say this - this is an emergency?

Other comments and questions raised by people

- What is going on locally to me and how can I get involved?
- It will need a lot more community engagement to hit the kind of targets we need to hit. The economy is intimately bound up in the environment, so that must be addressed, and we need educated on that.
- Please use this information to do something tangible that will have an impact, you have community, you have social prescribing, create the opportunities and strategies for communities to be supported to be greened.
- Any change in the right direction is positive. Also 50% reduction in a few years is a HUGE challenge, but if successful, it could serve as an example to follow for less-proactive areas.
- Greener, better public transport. Better, integrated cycle lanes making cycling safer, no more road expansion, preserving green spaces, no more car parks and concrete, circular recycling system that works , total ban on plastics , massive rewilding initiatives in city , public info campaigns re no concrete, paving , Astro turfing gardens , stop spraying pesticides MCC .
- We must act now. Manchester could be an exemplar.

Manchester City Council
Report for Resolution

Report to:	Environment and Climate Change Scrutiny Committee – 14 October 2021 Executive – 20 October 2021
Subject:	Large Scale Renewable Energy Generation Feasibility Summary Study
Report of:	The Deputy Chief Executive and City Treasurer

Summary

The Council's Climate Change Action Plan (CCAP) has a target to reduce direct emissions of CO2 by 50% over the five-year period of 2020-25. In addition, the Council has a target to be zero carbon by 2038.

Action 1.4 of the CCAP targets 7,000 tonnes of annual CO_2 by 2025 savings to be delivered via a **"**feasibility and business case for a large-scale energy generation scheme from large scale Solar PV or Onshore or Offshore Wind on Council land and buildings, or sites in third party ownership".

Local Partnerships were appointed in November 2020 to deliver the feasibility study and their study, **"Feasibility Study and Options Appraisal for Large Scale Energy Generation for Manchester City Council",** was completed in April 2021 and is attached as Appendix 1 to this paper.

The Feasibility Study concluded that the Council has two options: either purchase a solar PV facility or negotiate a suitable power purchase agreement (PPA). Both options were assessed to be better than the "do nothing" option.

Recommendations

The Environment and Climate Change Scrutiny Committee is:

1. Invited to comment on the report and note the options in Section 3.1 available to the Council; and
2. Endorse the recommendation that the Executive is asked to agree that the Deputy Chief Executive and City Treasurer and the Chair of the Zero Carbon Coordination Group establish a delivery team to develop the options further, with a view to returning to the Executive with a proposal.

The Executive is asked to:

1. Note the options in Section 3.1 available to the Council; and
2. Agree that the Deputy Chief Executive and City Treasurer and the Chair of the Zero Carbon Coordination Group establish a delivery team to develop the options further, with a view to returning to the Executive with a proposal.

Wards Affected: All

Environmental Impact Assessment - the impact of the decisions proposed in this report on achieving the zero-carbon target for the city
Action 1.4 of the Council's Climate Change Action Plan 2020-25 targets 7,000 tonnes of annual CO_2 savings by 2025. The CCAP sets out the actions that will be delivered to ensure that the Council plays its full part in delivering the city's Climate Change Framework 2020-25 which aims to half the city's CO_2 emissions over the next 5 years.

Our Manchester Strategy outcomes	**Contribution to the strategy**
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	The transition to a zero carbon city will help the city's economy become more sustainable and will generate jobs within the low carbon energy and goods sector. This will support the implementation of the Our Manchester Industrial Strategy and Manchester Economic Recovery and Investment Plan.
A highly skilled city: world class and home grown talent sustaining the city's economic success	Manchester is one of a small number of UK cities that have agreed a science-based target and is leading the way in transitioning to a zero carbon city. It is envisaged that this may give the city opportunities in the green technology and services sector.
A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	Transitioning to a zero-carbon city can help to tackle fuel poverty by reducing energy bills. Health outcomes will also be improved through the promotion of more sustainable modes of transport and improved air quality.
A liveable and low carbon city: a destination of choice to live, visit, work	Becoming a zero carbon city can help to make the city a more attractive place for people to live, work, visit and study.
A connected city: world class infrastructure and connectivity to drive growth	A zero carbon transport system would create a world class business environment to drive sustainable economic growth.

Full details are in the body of the report, along with any implications for

- Equal Opportunities Policy
- Risk Management
- Legal Considerations

Financial Consequences – Revenue
It is expected that the Revenue requirements needed to take this forward will be met from existing directorate budgets; if this is not possible, the financial consequences will be that an additional funding requirement is needed to establish a delivery team, including the cost of engaging the necessary external technical support.

Financial Consequences – Capital
It is not expected that there will be any immediate financial consequences to the Capital budget from the content of this report. However, it should be recognised that the outcome of the report options will have capital cost implications.

Contact Officers:

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

Feasibility Study and Options Appraisal for Large Scale Energy Generation for Manchester City Council – Local Partnerships (April 2021)

1.0 Introduction

1.1 Action 1.4 of the CCAP targets 7,000 tonnes of annual CO_2 savings via a "feasibility and business case for a large-scale energy generation scheme from large scale Solar PV or Onshore or Offshore Wind on Council land and buildings, or sites in third party ownership".

1.2 Local Partnerships were appointed in November 2020 to deliver a Feasibility Study. A working group to inform, support and manage the study was established led by the Deputy Chief Executive with officers from Estates, Commercial Services, Financial Services and the Zero Carbon Team.

1.3 The Local Partnerships brief was to consider:

- The amount of energy generation assets required to deliver the 7,000 tCO_2 annual savings.
- The size and type of assets with the potential to deliver this, including options for Council-owned land and buildings, partnerships with other land and building owners or developers in the city as well as options both within and beyond the city boundary and Greater Manchester.
- Funding and financing options including prudential borrowing, private financing, government grants etc.
- The range of operating models available including power purchase agreements (PPAs), own and operate, etc.
- The opportunity to deliver maximum, medium to long-term benefits for the Council in both commercial and climate action terms to, and beyond, 2025.
- An assessment of the risks and benefits of individual opportunities.
- The Council's current and future capacity to deliver, including the administrative and specialist capacity requirements for the development, procurement, commissioning and operation.
- An assessment of the different business models available in terms of investment cost, commercial risk and speed of deliverability supported by an option appraisal on Net Present Value (NVP), using commercially available data.

1.4 The study, **"**Feasibility Study and Options Appraisal for Large Scale Energy Generation for Manchester City Council", was completed in April 2021.

1.5 Progress updates were presented to SMT in August and December 2020 and the final study was presented to SMT in June 2021. A briefing was held with the Leader, Cllr Craig and Cllr Rawlins on the 8th September 2021.

2.0 Key findings of the Feasibility Study and Next Steps

2.1 Solar PV is recommended as the most appropriate renewable technology. Onshore wind developments are very limited in availability and are often subject to planning challenges. Offshore wind is generally too large a scale to be suitable.

2.2 The size of requirement needed to deliver 7,000 tCO_2 annual savings is equivalent to ~33MW of solar PV. To deliver benefits beyond this point and contribute more significantly to the Council meeting its target to be zero carbon by 2038, then ~45-50MW of solar PV would be required. The Council should consider adopting this size of requirement to future-proof residual emissions through to 2038, facilitating an earlier reduction of a greater proportion of the Council's (Scope 2) electricity emissions and maximising the potential for carbon reduction through renewable energy.

2.3 The Council has maximised capacity on its own buildings for renewable energy generation. 6.67MW is already scheduled to be installed via roof-mounted solar PV installations on the Council's estate. These are being delivered by Phase 1 of the Estates Carbon Reduction Programme, the Public Sector Decarbonisation Fund and the ERDF Unlocking Clean Energy project. The generation from these schemes is already accounted for in the CCAP.

2.4 There is no suitable land in Council ownership to deploy 45-50MW of solar capacity. An area of ~100 Ha of land is required to deliver the 7,000 tCO_2 requirement. The study examined 35 historic landfill sites across the city, concluding that many had been reclaimed as amenity spaces or were not suitable due to location issues, e.g. proximity to housing. They also looked at opportunities at Heaton Park and the adjacent reservoir, both excluded due to land use and heritage status. The study also explored Council-owned land adjacent to Wythenshawe Hospital which was excluded as it is allocated for employment in the spatial framework. Manchester Climate Change Partnership (MCCP) members were also canvassed and there was a review of planning applications to identify any schemes submitted with potential partnership opportunities.

2.5 No opportunities were identified within Manchester for a partnership project. Two ground mounted solar projects are planned in Rochdale (5MW) and in Salford (1.7MW). The size of these schemes is not large enough to facilitate collaboration. No other third-party developments were identified for acquisition.

2.6 Since the publication of the feasibility study, the GMCA Go Neutral project has assessed opportunities for small-scale renewable energy assets across the city-region. Based on initial findings it is estimated that ~7-14MW of additional capacity could be available on Council-owned buildings and small parcels of land in Manchester.

2.7 The feasibility study concludes that the Council needs to look out of area to deliver the required size of generation, given there is no local opportunities for solar PV at the required scale. Additionally, the study noted that where levels of irradiance are higher, solar PV schemes deliver a better return on investment (ROI). Irradiance levels are potentially 13% higher in the south of the UK compared to Manchester and would generate a higher ROI.

2.8 To provide the Council with a deeper understanding of the available options, Local Partnerships used data from Aurora Energy Research (provider of commercial modelling and forecasting data for renewable technologies) to

generate an options appraisal based on current and forecasted pricing. The Net Present Value (NPV) calculations were appraised over an 8 year and a 25-year period and were compared to a 'do nothing' scenario, i.e. the Council's current green tariff.

2.9 This calculation showed that all options have positive NPV outcomes compared with 'do nothing'. There is a solid value for money basis to either enter into a suitable PPA or asset purchase agreement and the Council should therefore seek to change its current supply arrangements.

2.10 A budget of £27m–£30m is the estimated cost for an asset purchase. A solar asset is anticipated to have a life of 35-40 years. Should this option be selected, and a suitable facility identified, the Council would need to be prepared to move at speed as the numbers of projects of this kind coming to market are relatively few and are likely to be in high demand.

2.11 To progress effectively, we are bringing together a project team that incorporates appropriate internal capacity within our Corporate Landlord functions (including our Energy Management and Facilities Management Teams). We will supplement this by securing appropriate expert advice to implement the recommendations around purchase of a solar facility twin-tracked with a PPA. This twin-track approach allows us to progress the two recommended options in line with the findings of the feasibility study and is necessary to allow us to make the right purchase to meet our needs within the CO2 targets and timescales set in our Climate Change Action Plan.

2.12 The project team will develop a business plan which will be brought back to Executive to secure the appropriate approvals that will allow us to make any future asset purchase and / or enter into a PPA in a timely and effective manner.

3.0 Recommendations

3.1 The Council will act on the findings of the feasibility study and undertake work to deliver the purchase of a solar PV facility, and alongside this, develop options to enter into suitable Power Purchase Agreements (PPAs). This twin-track approach is to ensure we meet the overall objective of reducing the overall emissions target as the availability of solar sites of the size required is dependent on market availability and the PPA option is also needed to ensure we can meet the target in full within the timescales set in the Climate Change Action Plan.

3.2 Carol Culley, as Deputy Chief Executive and Chair of the Zero Carbon Coordination Group is delegated to establish a delivery team which builds on existing Council capacity and skills and draws in necessary external experts to develop the options, with a view to returning to the Executive with a proposal having carried out appropriate due diligence work on these options.

4.0 Contributing to a Zero-Carbon City

4.1 Action 1.4 of the CCAP targets 7,000 tonnes of annual CO_2 savings by 2025 and is a key action to ensure that the Council plays its full part in delivering the city's Climate Change Framework 2020-25 which aims to half the city's CO_2 emissions over the next 5 years.

5.0 Contributing to the Our Manchester Strategy

(a) A thriving and sustainable city

5.1 The transition to a zero carbon city will help the city's economy become more sustainable and will generate jobs within the low carbon energy and goods sector. This will support the implementation of the Our Manchester Industrial Strategy and Manchester Economic Recovery and Investment Plan.

(b) A highly skilled city

5.2 Manchester is one of a small number of UK cities that have agreed a science-based target and is leading the way in transitioning to a zero carbon city. It is envisaged that this may give the city opportunities in the green technology and services sector.

(c) A progressive and equitable city

5.3 Transitioning to a zero-carbon city can help to tackle fuel poverty by reducing energy bills. Health outcomes will also be improved through the promotion of more sustainable modes of transport and improved air quality.

(d) A liveable and low carbon city

5.4 Becoming a zero carbon city can help to make the city a more attractive place for people to live, work, visit and study.

(e) A connected city

5.5 A zero carbon transport system would create a world class business environment to drive sustainable economic growth.

6.0 Key Policies and Considerations

(a) Equal Opportunities

6.1 There are no equal opportunity issues to note that should arise from the content of this report.

(b) Risk Management

6.2 The key risk is to successful delivery of the Council's Climate Change Action Plan as action 1.4 is targeted to generate 7,000 tonnes of annual CO_2 savings by 2025 and the earlier this is delivered, the greater the contribution to staying within the carbon budget for the five year period.

(c) Legal Considerations

6.3 The legal issues to note from the content of this report are that in regard to a an asset purchase, PPA or a hybrid it will be necessary to consider the relevant public contracts regulations and the Council's own Contractual Standing Orders in regard to procurement and the processes associated with procurement and associated decision making along with relevant decision making processes for the acquisition of an asset and any agreements entered into in association with any proposal. In this regard appropriate delegated decision making powers and approvals will also need to be considered. Legal Services will provide support and advice in regard to such matters and also in regard to the recommendations in this report seeking such appropriate expert technical and professional support and advice as shall be appropriate.

Appendices

Appendix 1 – Feasibility Study and Options Appraisal for Large Scale Energy Generation for Manchester City Council – Local Partnerships (April 2021)

JOINTLY OWNED BY

LOCAL PARTNERSHIPS

HM Treasury

Local Government Association

Llywodraeth Cymru Welsh Government

Feasibility Study and Options Appraisal for Large Scale Energy Generation for Manchester City Council

Version No: FINAL

Issue Date: 12 April 2021

1 Executive Summary

1.1 Background and Purpose

Manchester City Council ("the Council") has declared a climate emergency and set a science-based target to be zero carbon by 2038. It has already reduced its direct emissions by 48% from a 2009/10 baseline[1]. Ongoing work to reduce emissions further is set out within the Council's Climate Change Action Plan (CCAP) for 2020-25. The CCAP includes a target to halve emissions again within this 5-year period and sets a carbon budget for the period too.

Work is underway across several different strands to meet these emission reduction targets – from improving the energy efficiency of street lighting to decarbonising heat within the estate and investing in large scale renewable energy generation capacity. In October this year, Local Partnerships was appointed to carry out a feasibility study to investigate options for large-scale renewable energy generation - in line with Action 1.4 of the CCAP which sets a target to reduce CO_2 emissions by 7,000 t pa.

1.2 Methodology

This report is based on a desk-based review of opportunities on land assets owned by the Council, a review of potential market opportunities to acquire assets from third parties and a review of potential power purchase agreement (PPA) options. For the reasons set out in section 3.1 of this report the analysis of self-development and asset purchase concentrates on solar PV generation. PPA options consider all alternatives.

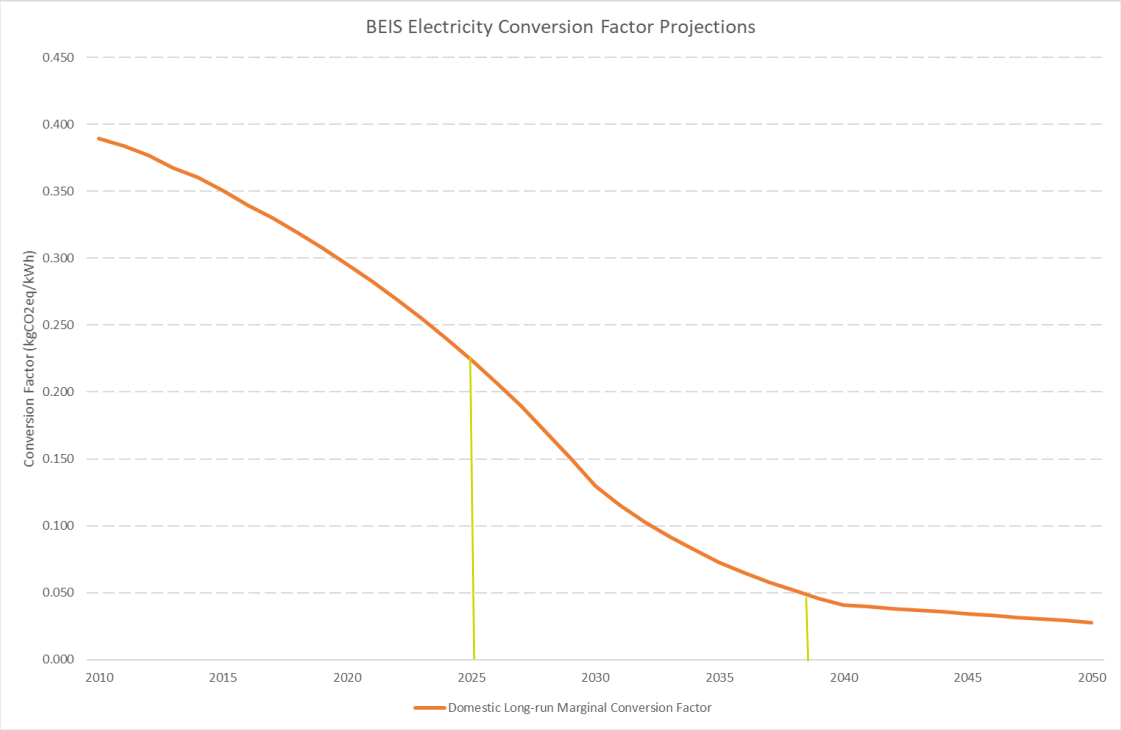
1.3 Size of the requirement

Carbon displaced through renewable energy generation can be described as the avoidance of carbon emissions through grid supplied electricity. The UK has seen significant reductions in the carbon intensity of grid supplied electricity over the last ten years resulting from the retirement of most of the UK coal fired power stations and the introduction of gas fired power stations and renewable energy.

For the UK to achieve net carbon zero emissions by 2050 the complete decarbonisation of the electricity supply will be needed. This will require several measures including a fourfold increase in renewable energy generation. As this happens the carbon intensity of grid supplied electricity falls (see Figure 1)

1 https://democracy.manchester.gov.uk/documents/s16275/Final%20MCC%20Climate%20Change%20Action%20Plan%202020-25.pdf

Figure 1: Forecast for electricity grid decarbonisation 2010-2050



Based on the requirement to avoid 7,000 tonnes of tCO_2e by 2025, the Council would require a solar PV portfolio of 33 MW in addition to that already identified in its carbon savings programme. By the Council's net zero emissions date of 2038 the carbon intensity of grid supplied electricity has fallen significantly. In 2038 it is anticipated that the Council will have residual emissions of around 2,913 tonnes of tCO_2e which would require a solar PV portfolio of around 60 MW to offset. The methodology for calculating the 2025 and 2038 requirements is set out in section 3.2.1 and 3.2.2.

The Council will only be able to offset emissions from electricity generation against its electricity consumption (i.e. scope 2 emissions). In setting a target requirement consideration also needs to be given to the future consumption of electricity by the Council. 2018/19 electricity consumption was around 49GWh (excluding schools). A further 4GWh/pa reduction is forecast from the street lighting programme, leaving a residual requirement of around 45 GWh/pa. No further assumptions have been made on volumes due to uncertainties, with volumes set to decrease as a consequence of energy efficiency and rationalisation of property, but also set to increase through the electrification of heat and transport.

At an irradiance level of 945 kwh/kwp (see section 3.2 for further details) the annual consumption would equate to around 47.6 MW.

Bringing together these assumptions the Council should consider adopting a target of around 45-50 MW of generation (solar PV or equivalent wind) in order to meet its ongoing requirement.

Recommendation 1: The Council should consider adopting a target of 45-50 MW of solar PV generation (or equivalent wind) now as this will:

a) **Provide a future proof solution which will also deal with residual emissions in 2038.**

b) **Allow a larger proportion of the Council's scope 2 electricity emissions to be reduced from an earlier point in time. This will help the Council in achieving its carbon budget target.**

c) **Maximise the potential of carbon reduction through generation or power purchase.**

Figure 2 below sets out how this requirement is likely to be met.

Figure 2: Opportunities for renewable energy generation

1.4 Council owned sites

The Council has already identified around 6.67 MW of rooftop and carport solar PV (see Table 1) that could realistically be delivered on its own assets.

Table 1: Manchester City Council – Estate wide opportunities for renewable generation

Opportunity	Sites	Solar capacity (MW)
Potential roof mounted solar schemes (Phase 1 Buildings Carbon Reduction)	a) Wythenshawe Forum	0.165
	b) The Sharp Project	0.790
	c) Space Project	0.494
	d) Hough End Leisure Centre	0.188
	e) East Manchester Leisure Centre	0.179
	f) Arcadia Sports Centre	0.166
	g) Moss Side Leisure Centre	0.101
	h) Belle Vue Sports Centre	0.375
	i) Manchester Tennis and Football Centre	

		0.103
Potential roof mounted solar schemes (Public Sector Decarbonisation Fund)	j) Arcadia Library & Leisure Centre k) Manchester Aquatics Centre l) Manchester Tennis and Football Centre m) North City Family & Fitness Centre n) Sharp Project Media Centre o) Wythenshawe Forum p) Zion Arts Centre q) Space Studios	0.082 0.367 0.165 0.146 0.273 0.142 0.102 1.20
Potential roof mounted and carport schemes (ERDF Unlocking Clean Energy)	r) Hammerstone Road – roof mounted s) Manchester Velodrome - carport	0.717 0.915
	Total Solar PV	**6.67**

These schemes are already accounted for in relation to carbon accounting and therefore do not contribute towards the 7,000 tCO2e target.

1.5 Further potential sites

The Council has limited land available to support large-scale solar PV generation. The requirement identified in section 1.3 will require around 100 Ha of land to achieve, which would be hard to find in a densely built-up area.

Table 2 sets out the criteria that have been considered in assessing sites for potential suitability:

Table 2 – screening tests for potential projects – Solar PV

Risk Category	Action and Information Sources
Viability	Size and orientation. For a scheme to offer sufficient financial return on investment to pay for a grid connection it is likely to need to be > 1MW. A site of this size would require 5 acres of land. Shading from trees or adjacent buildings which would prevent the solar panels from working effectively.
Planning	Planning designations (greenbelt, Area of Outstanding Natural Beauty (AONB) etc). Sites allocated for housing – local plan Proximity to housing – we would recommend at least 300m. Potential loss of amenity either through loss of established public use of a site. Transport and access constraints. Other development issues such as flooding, proximity to historic buildings, complex ecology etc.

Risk Category	Action and Information Sources
Land	Agricultural land grade 3b or below. Indicative land grade is provided by Natural England . (http://publications.naturalengland.org.uk/category/5954148537204736). Land ownership including underlying interests and covenants, tenancies etc – Land Registry and deed packets Does the land have direct access to the public highway? Suitability of ground conditions and ground contamination/ stability.
Grid	Available and affordable grid connection capacity for the export of power generated

We have examined a range of land holdings including 35 historic landfill sites across the city. Many of these closed landfill sites have been reclaimed as open space (for example, Clayton Vale and Tweedle Common) or are not suitable for development as a result of location issues where adjacent land uses effectively rule out development (also see Appendix 4). For example, Shack Liffe Green is nestled between the houses of Horncastle Road and Boggart Hole Clough Park. The site has received minimal intervention and as a result now has a very diverse habitat with ecological value.

We also identified potential opportunities for solar PV at Heaton Park and on Council owned land south of Wythenshawe Hospital. Further investigation of these sites suggests that there are issues which would prevent them providing solar PV capacity as follows:

- Heaton Park is a large, historic, Grade II listed municipal park and reservoir, containing a number of historic structures dating from its original use as a country estate. It is used for a mix of formal and informal recreational opportunities in a primarily informal landscape. Heaton Park is a site of heritage value and as such a heritage impact assessment will be required to determine any potential harm or opportunities on the listed buildings within the setting. Heaton Park is also designated as a green belt area. At the time of writing, grid capacity of around 8 MW was the available in the vicinity of the site.

  Discussions with the Council's planning department has precluded a development of this scale due to the impact on heritage assets. As an alternative a significantly smaller solar carport project was considered, but again this is likely to be unsuitable in planning terms.

- The land south of Wythenshawe Hospital under is included within Allocations 11 and 46 for employment within the Greater Manchester Spatial Framework Publication Plan 2020. These allocations and supporting planning documents have been through extensive consultation and as such it would be very difficult to make representation to amend the allocations for a ground mounted solar scheme to be brought forward on the site. The plan is currently going through all ten Greater Manchester Combined Authority councils for approval. The consultation on the final plan is scheduled from 1 December 2020 to 26 January 2021.

There remains potential for up to 2 MW of solar PV on both the car park and roof areas at the site, however it is likely that this will be required by the eventual occupiers of the site.

Further investigation of the planning constraints associated with these assets suggest that **none of this will contribute** to the overall requirement as the sites are unsuitable in planning terms.

A review of planning applications within the Council's area over the last two years has not provided any potential third-party schemes within the Council's boundary.

1.6 Greater Manchester Combined Authority Sites

Other councils within the Greater Manchester Combined Authority area are also exploring potential opportunities for solar farm sites. The ground mounted projects planned include solar farms at Chamber House farm in Rochdale (5 MW) and Kenyon Way in Salford (1.7 MW). The size of these schemes are not large enough to necessitate a collaboration with the Council and we have not been able to identify any third party developments which could be acquired.

1.7 Market Schemes – UK wide opportunities

We have identified no additional potential for schemes within the Greater Manchester area.

As the Council's requirement cannot be met from within its own asset base it is likely to need to acquire assets from the open market or enter into a suitable PPA. Section 8 of this report sets out how the Council can position itself to be able to respond to market opportunities as they arise. It is most likely that schemes available to purchase will be onshore solar PV for the reasons set out in section 3.1.

There is a substantial pipeline of new solar PV projects in the UK, but many of these projects are either already owned by, or committed to, existing investors. There are two types of developers of solar PV assets in the UK, those who are part of or commercially attached to the major funds (e.g. Greencoat, BlackRock and Octopus Renewables), and those who fund their own developments and sell projects. This report has been produced following dialogue with developers who sell projects.

There are examples of local authorities successfully purchasing Low and Zero Carbon (LZC) most notably Warrington Borough Council who have acquired around 100 MW of solar PV and storage assets from Gridserve.

The solar development market has focused in recent years on the development of larger schemes, typically larger than 30 MW capacity and mostly concentrated just under 50 MW in size. These schemes are a good fit with the Council's overall requirement.

During the course of this process, Local Partnerships has identified three potentially suitable projects for the Council to review. Other schemes may become available over time and these schemes may no longer be available when the Council is in a position to act, so implementation of an asset purchase scenario is likely to require new market

intelligence. We are not able to disclose commercially sensitive information in relation to projects identified, so these have been anonymised for the purpose of this report.

1.7.1 Project A – North West – 30 MW

Project is in development. Grid and land rights appear to have been secured by the developer. Planning is yet to be submitted. Earliest energisation date Q4 2023. Community development company.

1.7.2 Project B – The Midlands – 45 MW

Project has grid and land rights secured. Planning consent has been granted for the scheme. This scheme has a grid connection at 132kV which will add some complexity. Opportunity to purchase post construction. Earliest energisation date Q1 2022. Commercial developer.

1.7.3 Project C – Southern England – 46 MW

Project has grid and land rights secured. Planning consent has been granted for the scheme. Earliest energisation date Q3 2021. Commercial developer.

There will be competition for the acquisition of these projects, and the Council cannot therefore be certain at this stage of securing a particular project. The purpose of this report is not to identify and secure a project, it is to develop the Council's understanding of what is required to meet its objectives and the extent to which that is possible. This will enable the Council to take the necessary decisions to put in place measures which would allow it to engage with projects and move at the speed that is likely to be necessary to secure project rights. This report therefore does not contain a specific recommendation to pursue any particular option.

1.8 PPA options

Renewable energy PPA's are available either through major electricity suppliers or direct with generating stations. These are generally on terms ranging from 8-15 years. Renewable energy PPAs have some risks in carbon accounting terms in relation to permanence as the arrangement can be easily reversed at the end of the contract period.

1.8.1 Electricity supplier green PPAs

For this report we have reviewed options available from npower (the Council's current electricity supplier). Under these arrangements the Council are able to source their power directly from an identified renewable energy generating station, with pricing tied to the particular technology.

Various pricing options are available ranging from a fixed price option to options indexed at either CPI or RPI.

In addition to the carbon accounting risk in relation to permanence PPAs with major suppliers are harder to justify in terms of additionality as most of the schemes listed would have entered into a PPA with a large electricity supplier regardless of the specific demand from one customer. There is also the possibility of being accused of 'green washing' as by allocating particular renewable energy generation to a specific customer

the supplier is potentially increasing the carbon intensity factor for electricity supplied to its other customer who are not on a specifically 100% renewable energy tariff.

1.8.2 Direct PPAs with generating stations

It is possible to procure electricity directly from a generating station, through either a sleeved or a synthetic PPA. Either of these arrangements is compliant in terms of carbon accounting.

Whilst the permanence argument remains in relation to carbon accounting the additionality argument is much stronger when taking this alternative.

1.9 Value for Money

A financial appraisal of each of the options was undertaken and compared to the current state (do nothing scenario) using a net present value (npv) calculation. This modelling was undertaken by Local Partnerships on behalf of the council and utilises third party data from Aurora Energy Research (Aurora). The outputs of this modelling are shown in Table 3.

Local Partnerships are subscribers to Aurora, who are a market leading provider of energy price forecast information. Using high quality forecast information for forward energy prices provides the council with the highest likelihood of a robust npv calculation. Aurora's information is the basis of their business and clients are tied with strict contractual terms that prevent the release of forecasts to non-subscribers. Local Partnership's agreement with Aurora allows them to use the information in financial modelling and to release the outputs of that modelling in a form where the original data cannot be reverse engineered, but not to release the financial models as these contain the embedded data sets. We have therefore included the assumptions for the financial modelling and the outputs of the npv calculations in this report.

Local Partnerships and Aurora have undertaken a workshop with council officers to ensure that the council understands the basis of the data and the financial models that produce the npv information used in this report."

Table 3: Outputs from NPV modelling

Manchester City Council Scenario Comparisons (February 2021)

			Total Cost (25 yrs)	Cost after 8 years	25 year npv	8 year npv
	With sleeved PPAs					
1.	Do Nothing (assumes Aurora wholesale plus inflation)		-£85,558,054	-£21,965,089	-£43,366,132	-£17,091,133
2.	Fair Value Solar PPA Option	V Do Nothing	£15,808,392	£2,593,361	£7,235,495	£1,966,242
3.	Fair Value Wind PPA Option	V Do Nothing	£22,385,253	£5,528,952	£11,169,161	£4,258,268
4.	Solar Own/Operate Option Site 1 (southern England)					
4. a)	Solar own and operate with 25 year finance (southern England)	V Do Nothing	£22,017,266	£3,055,525	£9,977,925	£2,207,730
4. b)	Solar own and operate with 35 year finance (southern England)	V Do Nothing	£30,147,626	£5,765,645	£14,403,842	£4,347,664
5.	Solar Own/Operate Option Site 2 (the Midlands)					
5. a)	Solar own and operate with 25 year finance (the Midlands)	V Do Nothing	£20,225,002	£1,081,277	£8,263,154	£629,010
5. b)	Solar own and operate with 35 year finance (the Midlands)	V Do Nothing	£28,230,442	£3,749,757	£12,621,068	£2,736,065
6.	npower wind PPA (£48.50) indexation 2.0%	V Do Nothing	£20,089,059	£3,232,759	£9,293,783	£2,382,890
7.	npower solar PPA (£47.10) indexation 2.0%	V Do Nothing	£16,988,517	£3,773,486	£8,076,710	£2,807,458

From the table it is clear that all options represent value for money in relation to 'do nothing' and there is therefore a compelling reason to act.

Over a 25 year operation period both the asset acquisition options offer good value for money. If a shorter 8 year time horizon is considered then the a fair value (direct) PPA

with a third party or an asset acquisition of a site in southern England represent best value.

Recommendation 2: All options have positive NPV outcomes when compared with 'do nothing'. There is therefore a solid value for money basis to either enter into a suitable PPA or asset purchase agreement.

1.10 Options Appraisal

Four scenarios were taken forward into the options appraisal. These represented the best value alternatives from the NPV comparison exercise and include:

1. nPower wind PPA
2. Fair price wind PPA (direct with a generator)
3. An asset purchase of the site in southern England
4. An asset purchase of the site in the Midlands.

A total of seventeen criteria based around desirability, feasibility and viability were agreed with the Council and each option was scored against the criteria. Detail of this process can be found in section 10 and Appendix 5.
The output scoring from the options appraisal is set out in table 4.

Table 4: Options appraisal scoring

Option	Description	Score	Rank
1.	**nPower wind PPA.** A wind based PPA with nPower (current electricity supplier) linked to specific projects. This is for an 8 year duration and pricing has been obtained from nPower.	61%	4
2.	**Fair Price Wind.** A wind based PPA direct with a turbine operator. This assumes an 8 year duration with pricing based around the Aurora Energy Research fair pricing model.	72%	2=
3.	**Asset Purchase (Southern England).** An asset purchase of a 49 MW solar farm post construction. The farm is based in southern England and terms have been discussed directly with the owners. Financing is through a 35 year PWLB loan at 1.46%.	80%	1
4.	**Asset Purchase (The Midlands).** An asset purchase of a 46 MW solar farm pre-construction. The farm is based in the Midlands and terms have been discussed directly with the owners. Financing is through a 35 year PWLB loan at 1.46%.	73%	2=

From the options appraisal it can be seen that the purchase of a site in southern England represents both the best value for money and the best fit with the Council's objectives. There is little to choose between an asset purchase in central England and direct wind PPA.

1.11 Preferred option and PWLB risk

In November 2020 the Government published its response to a consultation on Public Works Loan Board (PWLB) lending terms. The consultation was aimed directly at preventing local authorities borrowing for projects which were purely or largely for yield and contained a specific note around investments being in the local economic area.

The asset purchase options are not in the Council's local economic area and it is highly unlikely that a suitable asset will ever become available in the Council's economic area. Furthermore, if investment in renewable energy generation is allowable (and within the local area it appears to be), then local authorities in the north of England are at a disadvantage to those in the south as irradiance levels (and therefore carbon saved and cost savings per £ spent) are less.

Before the Council can decide whether or not an asset purchase is its preferred option it needs to establish with HM Treasury whether or not it is permitted to make this investment under the new PWLB lending criteria.

Recommendation 3: Having undertaken a thorough options appraisal exercise the Council is now able to articulate that asset purchase is a value for money option to achieve their carbon targets and should now explore with HM Treasury whether or not an asset purchase would be compliant with PWLB lending terms.

1.12 No regrets actions and next steps

In order to deliver the strategy of reducing emissions by 7,000 tCO_2e by 2025, the Council will need to determine its preferred way forward. In order to do that the following are recommended:

1. Develop an understanding of the likely future requirements for electricity over the next decade. This should provide a view as to the likely overall requirements and the degree of certainty which could be attached to this forecast. In all scenarios there is a benefit in having reliable information on which to base assumptions.

2. Follow up established conversations in relation to the use of PWLB to ascertain whether an out of area asset purchase would be allowable under the new prudential regime.

If the Council determines that it wants to pursue an asset purchase strategy, then it will need to put in place measures to allow it to implement that strategy including:

3. Establishing sufficient delegated decision-making powers to allow the Council to enter into an exclusivity agreement with a developer and invest in the necessary due diligence work to determine whether a project is a viable prospect.

4. Establish a supplier base to facilitate the due diligence work including technical specialists and lawyers.

5. Develop its financial and carbon modelling to ensure that all costs and benefits for a particular project are understood.

6. Determine whether or not to proceed further with due diligence in relation to any of the large-scale projects identified.

If the Council determines that it wants to pursue a PPA strategy, then it will need to put in place the following:

7. A clear policy in relation to carbon accounting, tested with the Council's advisors in this area, setting out how additionality, permanence and traceability will need to be demonstrated by any procurement.

8. A suitable procurement for a direct 'fair value' PPA agreement.

2 Methodology

2.1 Site Generation Hierarchy

This report has been developed with reference to the methodology set out below.

1. Express the carbon reduction target in terms of renewable energy generation capacity. Review overall Council electricity consumption and combine the two to provide an overall renewable energy target that achieves a 7,000t CO2e reduction in 2025.

2. Review Council owned assets to ascertain how much renewable energy generation could be accommodated on Council owned assets, in addition to that already identified. This took the form of a desk-based review of suitability from an asset list supplied by the Council and references land, planning and grid connection constraints.

3. Once the Council's own estate has been exhausted, look for other opportunities in the Greater Manchester Combined Authority area with other public sector bodies. These opportunities were highlighted by the Council and reviewed on a similar basis to the asset review.

4. Third party schemes in the Council area were searched for through the planning registers, although no suitable schemes were identified as having been submitted for planning within the last two years.

5. Look for surplus generation capacity in the open market to fulfil any shortfall in relation to capacity. This was done by direct approaches to renewable energy developers known to sell projects and project rights on the open market. Local Partnerships has Non-Disclosure Agreements (NDAs) with these developers which allows us to provide anonymised data to the Council (who do not currently have an NDA). Three projects were identified through this process (see section 8.10). These sites have not been subject to due diligence and the information provided in the term sheets has been used to generate the information for the report.

6. Review available PPA alternatives. This took the form of dialogue with Aurora Energy Research to gain market insights and intelligence and a meeting with the Council's current energy supplier nPower to discuss alternatives they could offer.

The schemes in section 8.10 have also been subject to outline financial appraisal to ensure the Council has a broad understanding of scheme economics.

2.2 Key Considerations

The options are quite different in their approach, in order to analyse them further the following considered:

1. Is the size of the scheme a match with the Council's requirements

2. Work required by the Council to deliver the scheme

3. Timing – likely date of first generation
4. Irradiation
5. Potential for community involvement
6. Risks
7. Carbon benefits (a function of size, irradiation and timing)
8. Investment criteria (a function of size, irradiation, capital cost and Power Purchase Agreement (PPA) assumptions).

To assist the Council in understanding the different characteristics, we have run workshops with key personnel to cover each of the topics in detail and to provide the opportunity for assumptions to be explored and risks to be analysed. Further information in relation to PPAs, subsidy and price support mechanisms are found in Appendix 1.

The approach taken to the acquisition or development of schemes will also have risk and procurement implications. To assist in the understanding of this further information is provided in Appendix 2 in relation to procurement.

3 Sizing the Council's renewable energy generation requirement

3.1 Background

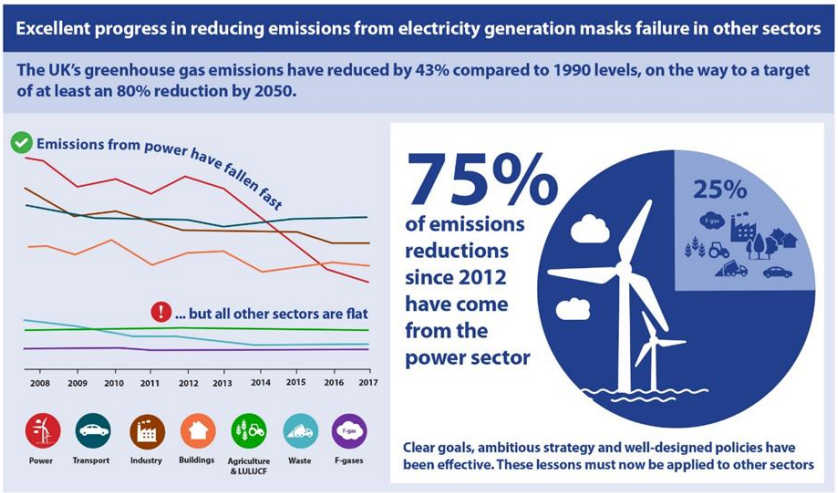
The Council has declared a climate emergency and set a science-based target to be zero carbon by 2038. It has already reduced its direct emissions by 48% from a 2009/10 baseline. Ongoing work to reduce emissions further is set out within the Council's Climate Change Action Plan (CCAP) for 2020-25. The CCAP includes a target to halve emissions again within this 5-year period and sets a carbon budget for the period too.

Work is underway across several different strands to meet these emission reduction targets – from improving the energy efficiency of street lighting to decarbonizing heat within the estate and investing in large scale renewable energy generation capacity. In October this year, Local Partnerships was appointed to carry out a feasibility study to investigate options for large-scale renewable energy generation - in line with Action 1.4 of the CCAP which sets a target to reduce CO_2 emissions by 7,000 t pa.

3.2 Grid decarbonisation

The UK has seen rapid decarbonisation of its electricity supply over the last eight years. Figure 3, produced by the Committee on Climate Change, sets out the progress towards decarbonisation made by the main sectors of the economy since 2012.

Figure 3: UK progress towards decarbonisation[2]



The UK Government has committed the UK to be a net zero emitter of greenhouse gases (GHG) by 2050. In order to achieve this commitment, decarbonisation of electricity generation will be a pre-requisite. The UK has continued to make progress with deployment of renewable energy and there are a number of measures in place (or in the

[2] Source: Committee on Climate Change 2018 progress report to Parliament – June 2018

pipeline) that should provide confidence that grid decarbonisation is likely to continue for the foreseeable future. These measures include:

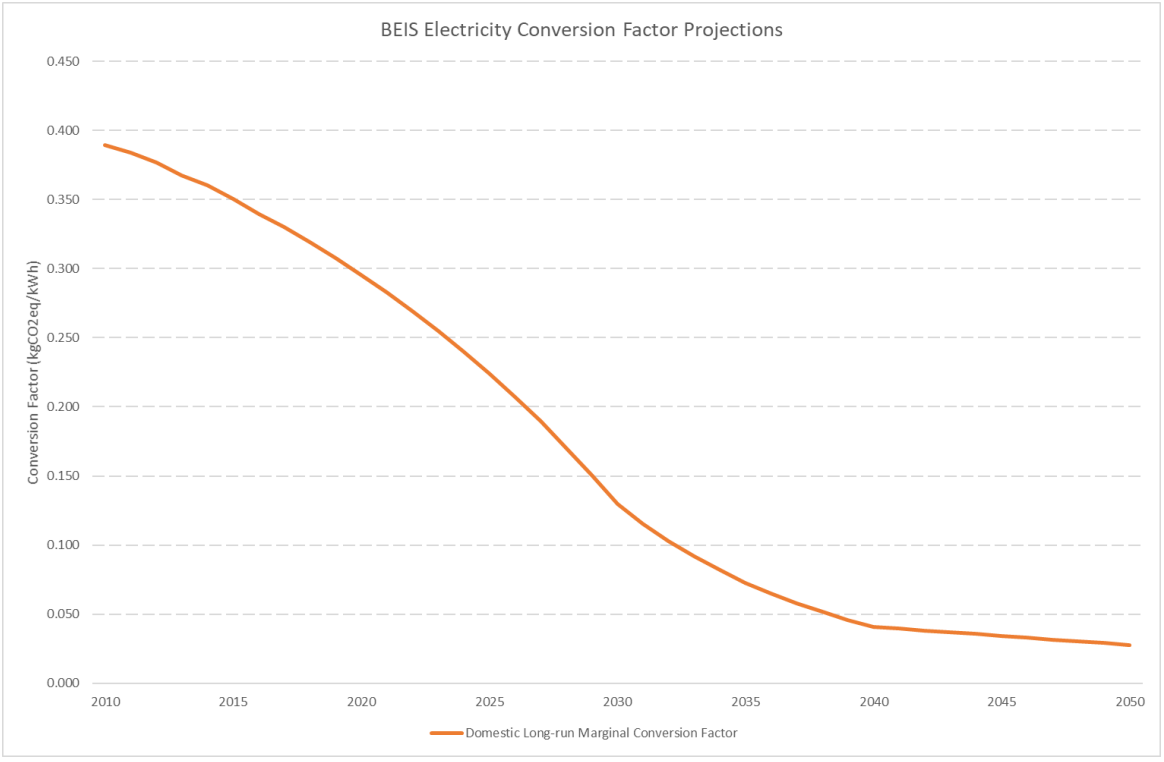
1. Offshore wind sector deal – aiming to triple current capacity to 30 GW by 2030. A further commitment to increase this to 40 GW by 2030 was included in the ten-point plan for a 'Green Industrial Revolution' made in November 2020[3].

2. Introduction of the Smart Export Guarantee Scheme – guaranteeing both an export market and a positive tariff at all times for small generators under 5MW.

3. Announcement that there will be a 12 GW allocation for mature technologies in the next round of Contract for Difference Auctions in late 2021. This in effect provides a mechanism for price guarantees for both onshore wind and solar PV schemes that are successful in the auction.

UK Government forecasts for the carbon intensity of the electricity supply were last produced by the Department of Energy and Climate Change in 2010. Decarbonisation has been happening at a rate slightly quicker than the forecast figures. The future forecasts are shown at Figure 4.

Figure 4: Forecast for electricity grid decarbonisation 2010-2050



Grid decarbonisation looks set to continue, but the rates of decarbonisation are likely to be less pronounced as almost all coal fired power stations have already been removed from the generation mix. In order to achieve net zero by 2050 the UK will have to increase its supply of renewable energy to around four times current levels. This is to allow for the removal of the gas fired power stations from the generation mix. These

3 The ten point plan for a green industrial revolution - GOV.UK

forecasts are now ten years old and current rates of grid decarbonisation are running approximately 13.5% ahead of the forecast figures.

3.1 Renewable energy technology selection

Solar PV and wind turbines represent the best value for money in UK renewable energy technology installations. There may be some small opportunities to generate power from other technologies, however the returns on investment are generally lower. We have not been made aware of any specific opportunities the Council has in relation to other technologies.

Development of new onshore wind turbines in England and Wales has been problematic since the introduction of new planning criteria in 2016 (see section 6.1), with the result that almost no new onshore wind capacity has been delivered in England or Wales in the last five years. Most new onshore turbines are in Scotland. Schemes in Scotland run the risk in the event of devolution that the Council has an investment outside of the country in which it is located. These schemes are also normally developed directly for investors and rarely come to the market. For these reasons it is considered unlikely that an onshore wind scheme would meet the Councils' requirements.

The Crown Estate is currently in the process of running its fourth leasing round, creating the opportunity for at least 7 GW of new offshore wind projects (see section 7.1). The Round 4 leasing process consists of five stages, the pre-qualification stage of which has already been completed. It is currently anticipated that Round 4 projects will become operational towards 2030. The size and delivery timing for offshore wind assets makes them unlikely to be a good fit with the Council's requirement.

These constraints, coupled with the largely urban nature of the Council's area, mean that our analysis for development or acquisition projects has focused on solar PV which represents the most realistic and affordable opportunities to meet the requirement. However, where a scheme may be improved by the incorporation of on-site storage then commentary on this has been provided.

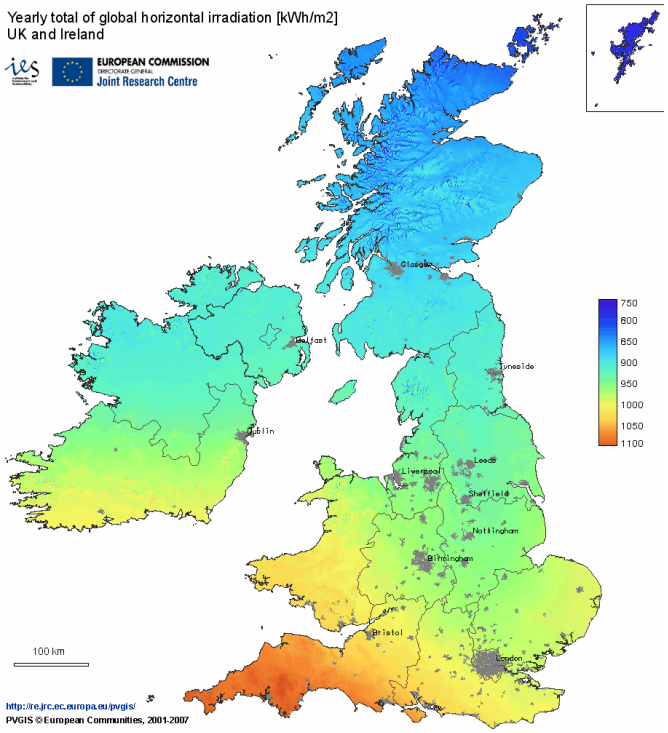
PPA options have also considered wind projects, although these are likely to be located in Scotland or offshore.

3.2 Calculating the appropriate size of a solar PV scheme to meet existing targets

The original brief was to offset 7,000 tCO_2e in 2025. Figure 3 shows that the carbon intensity of grid supplied electricity falls from 0.224 Kg CO_2e/kWh in 2025 to 0.052 Kg CO_2e/kWh in 2038. The Council's offsetting requirement also falls during the period 2025 – 2038, with a residual requirement in 2038 of 2,913 tCO_2e. We have therefore calculated the equivalent solar PV requirement for both 2025 and 2038.

The other significant variable in calculating the size of the requirement is solar irradiance. Irradiance varies across the UK and significantly affects project economics, as higher irradiance is in effect free fuel. Figure 5 on page 16 shows irradiance levels across the UK. As it is not yet known where any potential scheme might be located we have assumed a generic figure of 945 kWh/kWp of installed solar PV in our calculations, which is similar to the figure in Manchester. Schemes in southern England may have significantly higher levels of irradiation.

Figure 5 – UK solar irradiance levels (Source PVGIS)



3.2.1 Solar equivalent sizing - 2025

By 2025 grid supplied electricity is forecast by BEIS to have a carbon intensity factor of 0.224 Kg/ kWh.

Converting the **7,000-tonne requirement** into the equivalent grid supplied electricity can be done as follows:

1 Kg/kWh = 1 tonne/ MWh therefore:

7,000 tonnes/ 0.224 = 31,250 MWh of grid supplied electricity equivalent

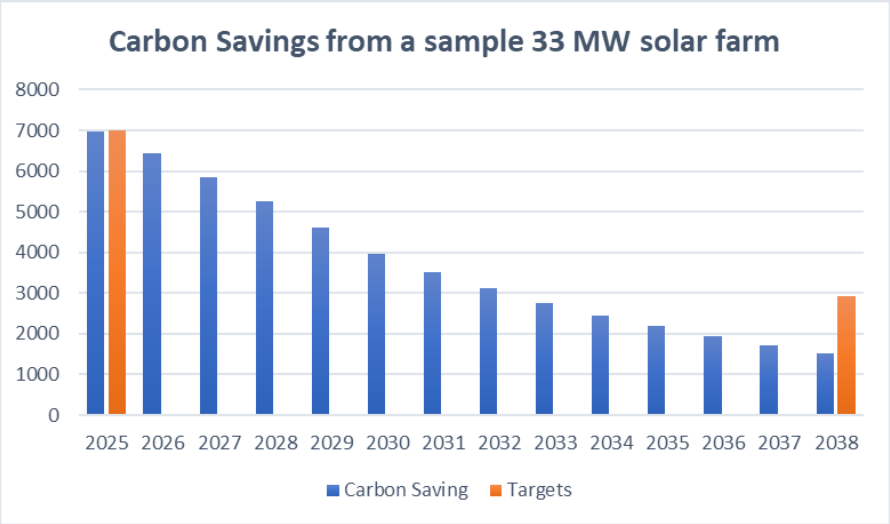
The projected irradiance for Manchester is in the region of 945 kwh/kwp[4].
For the requirement to be met by locally produced solar PV in 2025 the Council would therefore need:

31,250 x 1,000 (conversion MWh to kWh) / 945 = 33,069 kWp or the equivalent of around **33 MW solar.**

Figure 6 sets out how a 33 MW solar farm, sized to meet the 2025 target would fall short of the 2038 target.

[4] PVGIS Version 5 - CMSAF

Figure 6: Carbon savings from a 33 MW solar farm against targets



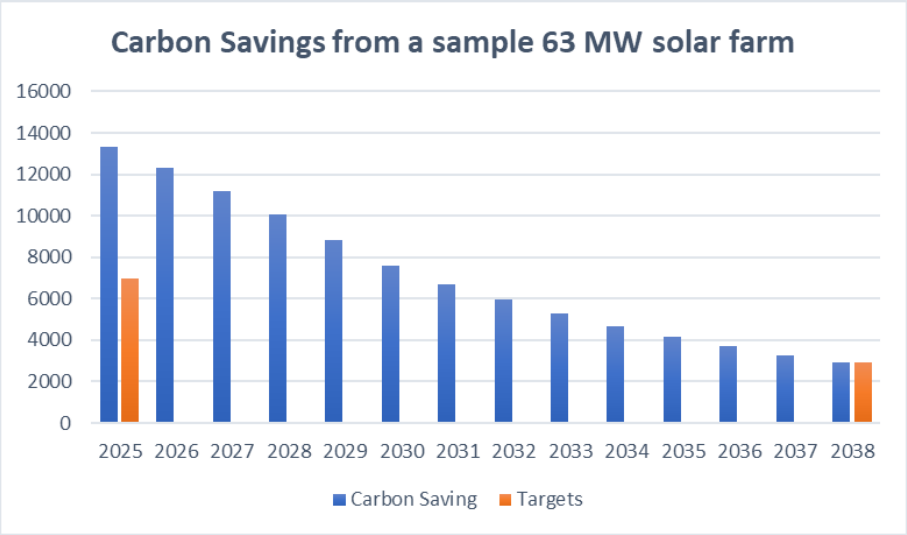
3.2.2 Solar equivalent sizing – 2038

By 2028 grid supplied electricity is forecast by BEIS to have a carbon intensity factor of 0.052 Kg/ kWh.

Following the same methodology set out above, but also allowing for the 0.4% annual degredation the 2038 **2,913-tonne requirement** is equivalent to a 63 MW solar requirement in the Manchester area.

Figure 7 sets out the carbon savings from 63 MW of solar against the targets in 2025 and 2038.

Figure 7: Carbon savings from a 63 MW solar farm against targets



3.2.3 Sizing by electrical consumption

The Council will only be able to offset emissions from electricity generation against it's electricity consumption (i.e. scope 2 emissions). In setting a target requirement we therefore also need to consider the future consumption of electricity by the Council. 2018/19 electricity consumption was around 49GWh (excluding schools). A further 4GWh/pa reductions are forecast from the street lighting programme, leaving a residual requirement of around 45 GWh/pa.

There is considerable uncertainty around future levels of consumption. The Council have ongoing energy efficiency programmes and will potentially also review their estates requirement following a year of homeworking through the Covid-19 lockdowns. These measures may see a significant decrease in electricity consumption, although analysis of previous years trends suggests that aside from the street lighting programme the Council has achieved year on year energy efficiency savings or around 2%.

Set against this the Council will need to use electricity for more things in the future if it is going to remove its scope 1 emissions (i.e. petrol, diesel and gas). It is likely that much of the fleet will need to be electrified and heating systems will require more electricity in the future.

45 GWh in 2038 would represent around 2,088 tCO2e in 2038. This is less than the 2,913 tCO2e identified in earlier work, and therefore assumes that the Council will achieve greater energy efficiency savings that previously identified.

Bearing in mind the uncertainty over electricity consumption we have used the 45 GWh/pa in the remainder of this report and focused on flexibility in our assessment of different alternatives.

At an irradiance level of 945 kwh/kwp (see section 3.2.1 for further details on methodology) the annual consumption would equate to around 47.6 MW of solar PV.

3.3 Carbon Accounting Practice

The Council will be able to account for the electricity produced from the renewable energy generators against its scope 2 emissions. These are the emission produced by the consumption of grid supplied electricity. It is not possible to use renewable energy generation to offset against scope 1 emissions in the UK.

Recommended practice in the UK is for organisations to undertake dual accounting for the use or generation of renewable energy. Under this methodology the initial assessment is undertaken using grid supplied electricity and then an adjustment is shown 'below the line' for the renewable energy. In this way it is possible to retain visibility over both total consumption of electricity (and the success or otherwise of energy efficiency measures) and the use of carbon.

In order for renewable energy to be reliably used in carbon accounting it is necessary to consider three things:

1. Whether or not the use of renewable energy directly contributes to additional renewable energy resource in the UK. Any scheme which would have gone ahead regardless of the arrangement should not be included in carbon

accounting measures. In particular the Council should be wary of supplies which are part of much wider arrangements where the allocation of a project to a particular customer would lead to the general supply for customers not on a 'green' tariff having a higher carbon intensity.

2. Permanence of the arrangement. Any initiative which can easily be reversed eg if budget cuts are required should not be included in carbon accounting measures.

3. Traceability. This means the extent to which it is possible to be certain that the electricity purchased has been generated at the point specified. This is governed in the UK by the Renewable Energy Generation of Origin (REGO) certifictes, a scheme which is administered by OFGEM. For the purposes of the remainder of this report it is assumed that all schemes will be able to provide suitable REGO certificates.

3.4 Size range and target size

The 2025 target requires a solar farm of around 33 MW, whereas to meet the 2038 target a much larger 63 MW solar farm would be required. These are both assuming an irradiance of 945 kWh/ kWp (Manchester area). If a suitable project could be found in an area with 10% higher irradiance, then the requirement would fall by the same amount.

If a larger project was selected, then it would meet the 2025 requirement and potentially the 2038 residual emissions target. A larger scheme would also have the benefit of contributing more to the earlier carbon budgets.

In order to contribute to CO2e reductions a scheme will have to be no larger than the Council's equivalent scope 2 emissions. We would therefore recommend that the correct size for the requirement is in the order of 45 MW – 50 MW of solar PV.

Recommendation 1: The Council should consider adopting a target of 45-50 MW of solar PV generation (or equivalent wind) now as this will:

a) Provide a future proof solution which will also deal with residual emissions in 2038.

b) Allow a larger proportion of the Council's scope 2 electricity emissions to be reduced from an earlier point in time. This will help the Council in achieving its carbon budget target.

c) Maximise the potential of offsetting through generation or power purchase.

Background – Key Points

The report sets out a requirement for the equivalent of 45-50 MW of solar PV.

Solar PV projects are more realistic than wind turbines due to planning restrictions.

4 Review of ground mounted solar PV opportunities on land assets owned by the Council

4.1 Overview

The use of large-scale ground mounted solar has been popular in the UK and represents around two thirds of the UK's overall installed solar capacity. Ground mounted solar PV schemes need scale to be cost effective as investment yields are typically relatively low (<6%).

Land recovered from former landfill activities can be used for ground mounted PV systems, but this increases the costs as mounting structures need to be surface mounted (as opposed to piled into the ground). It is also possible to install floating solar arrays on reservoirs, although these schemes are more expensive.

The requirement identified in section 3.4 will require in excess of 100 Ha of land to achieve. Our analysis (see Appendix 4) concludes that the Council has limited scope for ground-mounted solar that merit further investigation. The Council currently holds land interests at 35 historic landfill sites across the City. Many of these closed landfill sites have been reclaimed as open space (for example, Clayton Vale and Tweedle Common) or are not suitable for development as a result of location issues where adjacent land uses effectively rule out development. For example, Shack Liffe Green is nestled between the houses of Horncastle Road and Boggart Hole Clough Park. The site has received minimal intervention and as a result now has a very diverse habitat with ecological value.

Potential opportunities for solar PV exist at Heaton Park and on Council owned land south of Wythenshawe Hospital (see sections 4.4 and 4.5), however planning and other designations mean that these sites cannot realistically be brought forward for solar PV.

4.2 Development of ground-mounted solar PV schemes

In progressing ground mounted solar schemes on its own sites, the Council will need to consider the best approach to take to managing the development process. Detailed guidance on this can be found at Renewable Energy Good Practice guidance for the LGA.

Working with a third party brings skills and potential development finance but will require the benefits to be shared and a procurement will be necessary.

In this analysis we have not contemplated the Council developing sites on third party land as this would require the identification of suitable sites before any appraisal could take place. If the concept of ownership of large-scale ground mounted solar PV projects is agreeable this alternative could be considered as a potential delivery route, although it is resource intensive and carries significant development risk. Under the Prudential Code, local authorities cannot borrow from the PWLB or any other lender for speculative purposes.

The options for development of schemes on Council owned land are:

1. The Council acts as developer by directly managing the grid connection application and the submission of the planning application – this approach will maximise the financial benefits but carries the greatest risk in terms of development finance and failure to develop. The approach will require staff capacity and capability to manage the process.

2. Partnering with a solar developer who would take on some of the project risk. Given the relatively small size of the pipeline and the complexity of the procurement exercise that would be required, this route would be unlikely to provide best value.

3. Energy performance contracting – this approach uses a framework to appoint a suitable contractor who will then work up the scheme and manage the development process. Costs are incurred by the Councils for the development work, but financial returns are guaranteed.

4.3 Elements of development

Table 5 below sets out the initial screening tests that have been applied to Council owned sites in assessing their suitability to host solar PV projects.

Table 5 – screening tests for potential projects – Solar PV

Risk Category	Action and Information Sources
Viability	Size and orientation. For a scheme to offer sufficient financial return on investment to pay for a grid connection it is likely to need to be > 1MW. A site of this size would require 5 acres of land. Shading from trees or adjacent buildings which would prevent the solar panels from working effectively.
Planning	Planning designations (greenbelt, Area of Outstanding Natural Beauty (AONB) etc). Sites allocated for housing – local plan Proximity to housing – we would recommend at least 300m. Potential loss of amenity either through loss of established public use of a site. Transport and access constraints. Other development issues such as flooding, proximity to historic buildings, complex ecology etc.

Risk Category	Action and Information Sources
Land	Agricultural land grade 3b or below. Indicative land grade is provided by Natural England . (http://publications.naturalengland.org.uk/category/5954148537204736). Land ownership including underlying interests and covenants, tenancies etc – Land Registry and deed packets Does the land have direct access to the public highway? Suitability of ground conditions and ground contamination/ stability.
Grid	Available and affordable grid connection capacity for the export of power generated

There are three basic elements for developing a solar farm; land rights, grid connection and planning.

4.3.1 Land rights

The schemes we have reviewed are on land owned by the Council. There are, however, other land considerations which any scheme would need to we have reviewed are on land owned by the Council. consider. These are as follows:

1. Any leases, licences, covenants or other rights over the land.

2. Any third-party land rights which will be needed to lay a cable between the site and the point of connection identified by the electricity grid network operator Electricity North West (ENW).

3. Any alternative uses for the land which the Council may have and whether a solar farm represents the optimum use of scarce resources.

4.3.2 Grid connection

In order for any scheme to work it needs access to a grid connection. This needs to be at a suitable scale and affordable cost. Grid access is provided by the local network operator via a formal process of a grid application. Prior to the grid application, informal advice can be sought either via surgeries or via a ‘budget estimate’ process. These informal processes are helpful, but do not provide certainty either in terms of price or guarantee that a connection will be available when required. The grid offer process takes around 65 working days and involves an up-front cost (of the order of £2,000 per site).

Types of grid connection offer

ENW grid connection offers provide two alternative prices; one is for ENW to undertake all connection works i.e. from the project site on to their network (usually known as ‘all works’ offer). The second offer is for ENW to undertake only those works on the network which others are not allowed to undertake (for example upgrading their transformers to facilitate the connection).

This second type of offer is known as a Competition in Connections (CIC) offer. This form of offer is likely to be cheaper but will require the procurement of an Independent Connection Provider (ICP) to undertake the remainder of the works. Developers typically pursue the use of an ICP for the following reasons:

- Greater choice
- Greater flexibility
- Faster delivery
- It can be more cost effective
- They are more likely to use language you understand and have knowledge from other projects, especially where dialogue with ENW is required to optimise the connection.

Greater efficiencies and economies of scale (cable and staffing costs) are more prevalent on longer connections. From our experience, ENW are very conservative on programme timescales resulting in higher contractor's costs (for weekly site establishment and management) in comparison to ICPs who typically drive the shortest and most efficient programme of works.

If the Council decided to accept a CIC offer, then it would require either the procurement of an ICP or for the ICP works to be procured as part of the solar farm construction contract. This may add to the complexity of procurement activities. Further complexities arise through the need for the cable route to be included in the planning submission (ENW has permitted development rights which do not extend to the CIC contractors) and the management of road opening licences (which will normally be managed by the ICP).

4.3.3 Planning

Information to submit a planning application for large scale solar PV usually takes around six months to collate and three months to determine.

Key planning considerations generally include:

- Landscape and visual impact/amenity impact
- Ecology
- Transport, construction and noise
- Glint and glare
- Rights of way
- Flood risk
- Specific local policy designations and constraints

Planning for renewable energy schemes does carry an inherent level of risk.

Biodiversity net gain (BNG) is an increasingly prevalent requirement in planning decisions. This will become mandatory under the forthcoming Environment Bill. Any planning submission is likely to be required to demonstrate a 10% gain under the legislation, using the recently issued metric from the Department for Environment, Food and Rural Affairs (DEFRA).

Local buy-in to any scheme will be important in the urban area. There are instances where buy-in has been enhanced by working with community development groups or offering Community Municipal Investments (CMIs). The Council could consider using a

CMI as an alternative to, or alongside the Public Works Loan Board (PWLB) to fund the schemes.

For example, West Berkshire Council has looked to tackle its climate emergency by investing in its first CMIs. The Council offered residents and community groups an opportunity to invest directly with them to help build a greener future for the district. The council was seeking to raise £1 million to fund new rooftop solar power on council-owned buildings around West Berkshire. The CMI successfully closed reaching its £1m target five days ahead of the proposed deadline, attracting 640 investors who each invested an average of around £1,500. Similarly, Warrington Borough Council launched a CMI bond to raise £1m to help finance the construction of a solar farm near Cirencester and its co-located battery storage facility (a 24 MW hybrid project).

4.4 Heaton Park

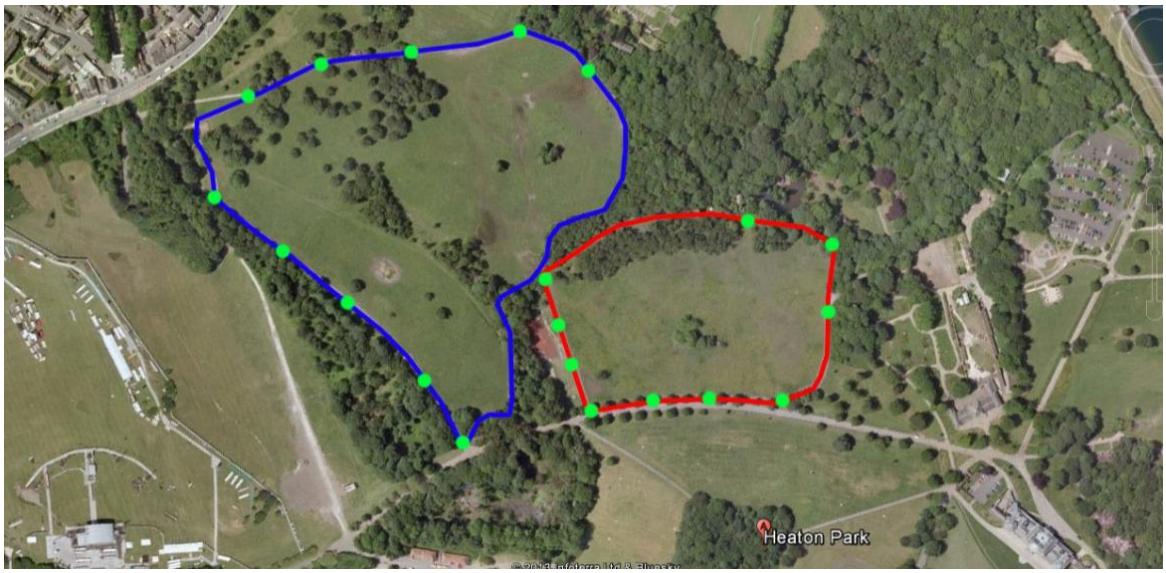
This is a desk-based analysis based on information that can be gained from websites, Google Earth and other electronic media. A site visit has not been undertaken by Local Partnerships as part of this assessment.

4.4.1 Site description

Heaton Park is a large, historic, Grade II listed municipal park, containing a number of historic structures dating from its original use as a country estate. It is used for a mix of formal and informal recreational opportunities in a primarily informal landscape.

The Council's Re:fit Service Provider, Ameresco, has identified two land parcels within Heaton Park as having potential for solar PV (see Figure 8). The area shown in red is approximately 4 Ha in size and at its closest point is 230m from Heaton Hall and orangery. There is a cluster of trees in the centre of the land parcel. The land is bounded by a tree lined perimeter path which forms part of a wider path network. Ameresco has indicated that the land parcel could support a 3.9 MWp solar PV scheme.

Figure 8: Potential land parcels for PV development at Heaton Park



The area shown in blue is a larger land parcel (circa 10.5 Ha) which is undulating with a gradual slope to a peak of mature trees. The land parcel is bounded by a tree lined

perimeter path which provides screening from Heaton Hall. There are three football pitches adjacent to the site. At its closest point the land is 510m from Heaton Hall.

Installation of a solar farm on the site would require considerable removal of trees. Consideration will also need be given to the existing site contours as it is likely that some levelling works would be required to facilitate the development of a solar panel array. Ameresco has indicated that the land parcel could support a 6.5 MWp solar PV scheme.

4.4.2 Planning

Key planning and design constraints for the site include:

1. Cultural Heritage and listing
2. Tree belts
3. Greenbelt
4. Nature and biodiversity considerations
5. Leisure and open space policies

The significance of Heaton Park, both as a heritage asset and a recreational resource mean that it is unlikely that any significant scheme could be brought forward at the site without significant harm.

Installing solar carports is becoming increasing popular for local authorities looking to generate renewable energy, and whilst it remains an expensive method of solar PV construction, a solar carport project at Heaton Park could provide the Council with the opportunity to generate renewable energy on the site whilst protecting the setting of the park. Ameresco has outlined a potential 500 kW scheme for one of the main car parks at Heaton Park. The Council recently obtained planning permission for a 915 kWp Solar carport at the National Cycling Centre, so is familiar with the technology. Discussion with the Council's planning department suggest that even a scheme of this size would not be suitable in planning terms.

United Utilities own the reservoir, meaning even if a floating solar scheme were possible in planning terms it would not be available to the Council.

4.4.3 Grid

A connections surgery call took place with ENW on 11 November 2020 to understand connections and capacity available in the vicinity of the site. An 11kV firm connection to support up to 8 MW of export was available circa 3.5km from the site. A budget connection cost was also provided by ENW, although firm costs will not be available until a formal offer is applied for and analysis of the connection route is completed.

4.4.4 Heaton Park Potential

The feedback from the Council's planning department means it is unlikely that any scheme could be brought forward at Heaton Park.

4.5 Land south of Wythenshawe Hospital

4.5.1 Site description

The land area under consideration (13.8 Ha) for a solar farm is located in the far south of Manchester, a short distance to the south of Wythenshawe Hospital. The area is bordered by Fairywell Brook to the southwest, which also forms the border with Trafford; by Dobbinetts Lane to the northwest; by a surface car park to the north; and, by Floats Road / Barnacre Avenue / Newall Road / Whitecarr Lane to the east and southeast.

4.5.2 Planning

The land under consideration is included within Allocations 11 and 46 within the Greater Manchester Spatial Framework Publication Plan 2020. The site has been allocated to provide around 2,400 high quality homes along with 60,000 square metres of employment land to provide high quality office space. These allocations and supporting planning documents have been through extensive consultation and as such it would be difficult to make representation to amend the allocations and therefore for a ground mounted solar scheme to be brought forward on the site. There is however the potential to target up to 2MW of solar car ports and rooftop solar as the site is developed.

4.5.3 Grid

A connections surgery call took place with ENW on 4 November 2020 to understand connections and capacity available in the vicinity of the site. ENW outlined that a firm connection to support up to 10 MWA of export was available circa 1.9km from the site (Green Lane (Altrincham) (33 kV / 11 kV)). The Council could also consider a private wire connection to provide a renewable energy supply to Wythenshawe Hospital.

4.5.4 Private Wire Connections

The term ‘private wire’ is used to describe a connection made directly to a customer’s premises. Private wires can significantly enhance investment yields as the customer avoids paying the network distribution charges for grid supplied electricity, which typically constitute around two thirds of their bill. This leaves scope for a higher price (relative to the wholesale price alternative) to be charged to the customer for the power supplied, whilst still representing a significant cost saving to the customer.

Further advice would need to be sought on the impact of any private wire connections in relation to carbon accounting practice and whether there would be any allowable reductions under this type of arrangement if the Council is not the customer.

4.5.5 Land to the south of Wythenshawe Hospital potential

As the land has been allocated for employment use it is very unlikely that it would come forward as a solar farm. There is however scope for up to 2 MW of solar (a combination of rooftop and carports). There is no certainty that the Council would act as developer and landlord at the site, so it may lose control of any solar potential through the development process. The economics of any scheme located on the site would be much improved by a ‘private wire’ direct to the occupiers. We therefore consider it unlikely that

any generation at this location would be utilised towards the Council's target and have discounted it form further analysis.

Ground Mounted Solar PV – Key Points

Our analysis has failed to find any significant sites with renewable energy generation potential which are under the Council's control and not already identified as part of the Council's existing programme for solar PV.

5 Battery Storage

5.1 Overview

Many councils have a diverse property portfolio which offers the opportunity to benefit from the growing demand for energy storage infrastructure. With recent advances in technology, falling costs and better regulation, local authority investment in this type of technology is becoming increasingly popular as a means of optimising existing assets and utilising renewable energy.

Battery storage systems do not provide direct carbon benefits, although they are required for the smooth operation of the electricity grid with the increasing prevalence of renewables. Standalone battery storage projects, unless the power is used by the Council, may be harder to justify as suitable for Public Works Loan Board (PWLB) funding.

Battery storage systems are becoming a popular addition to new and existing solar PV systems in a bid to increase the amount of self-consumption, mitigate against price cannibalisation risks and to reduce energy costs. For example, Exeter City Council is currently constructing a 1.2 MW ground mounted solar array co-located with energy storage technology, with a separate connection (private wire) to provide a renewable energy supply to its nearby operations depot.

Charging during daylight hours uses ‘free’ solar electricity and, if this energy is then discharged when electricity supply costs are higher this has the potential to offset the cost of grid supplied electricity.

5.2 Potential for battery storage across the Council estate

In March 2019, the new Greater Manchester 5-year Environment Plan was launched, setting a new target for the city region of carbon neutrality by 2038. The plan included a range of commitments for local authorities, including a target to develop 45 MW of energy storage over the next 5 years. Opportunities exist for large scale energy storage with the Council boundary which again requires further consideration of the land use at the sites identified. Table 6 sets out the opportunities which exist for large scale energy storage across the Council estate, which requires further consideration of the land use at the sites identified.

Table 6: Large scale energy storage opportunities

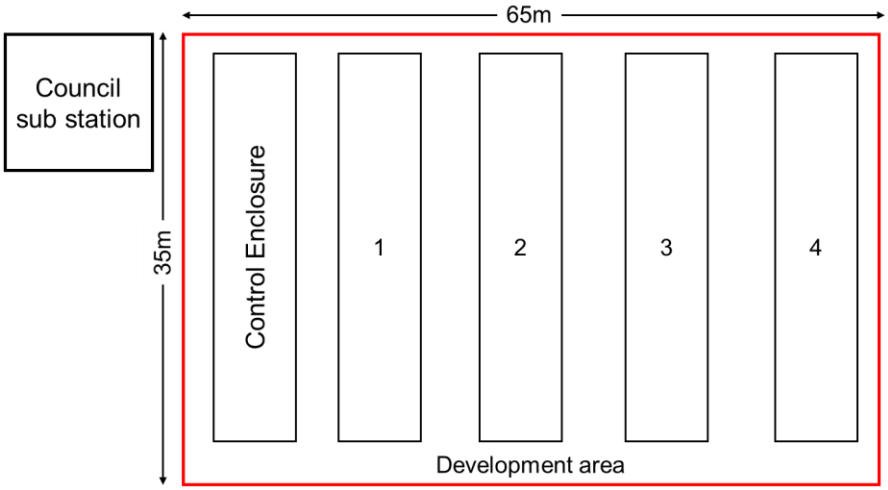
Site	Substation Name	Distance from substation	Battery energy storage headroom
Bradford Gas Works	Bradford (33 kV / 6.6 kV)	2.2km	7.8 MW
Airport Woodhouse Park	Moss Nook Primary (33 kV / 11 kV)	1.3km	11.2MW
Land south of Wythenshawe Hospital	Green Lane (Altrincham) (33 kV / 11 kV)	1.9km	10.0 MW

5.2.1 Land utilisation

A grid scale battery system consists of a group of containerised battery cells (usually Lithium Ion) that are connected to a major substation via a high voltage cable.

Figure 9, below, is a simplified and conservative system layout sketch for a 5 MW battery storage facility (including 4 x 1.26 MWh capacity enclosures and their associated transformers). This layout would occupy less than 0.25 Ha. A 2 MWh capacity battery storage system would typically be housed in 12.5m long containers which would reduce the development footprint further.

Figure 9: Simplified and conservative system layout sketch for a 5MW battery storage facility



Given the limited land requirement and access to a close grid connection point a battery storage facility could be included within the Council's overall employment use ambition for the land south of Wythenshawe Hospital.

As set out in section 4.5.3, the Council could consider a private wire connection to provide energy storage to Wythenshawe Hospital. A battery storage system would allow the hospital to control the timing and amount of electricity it purchases, sells or stores. This capability would enable the hospital to take advantage of a variety of opportunities to reduce electricity costs and generate revenues. Wythenshawe Hospital benefits from a recently installed Combined Heat and Power (CHP) unit which delivers almost all the power needed to run the hospital, as well as four new high-efficiency boilers. Supplementing the CHP with battery storage would give the hospital more flexibility over how to manage their energy.

A hospital's highest electricity usage typically occurs between 8 AM and 8 PM when demand for electricity and peak charges are high. Large-scale battery storage can help a hospital reduce peak costs by "shifting" all or part of its load to off-peak hours. By recharging a large-scale battery system during off-peak hours, the hospital pays the lowest rates for electricity. It can then use the stored electricity during the day to minimize the hospital's electricity purchases when charge rates are highest.

Both the Council and the hospital should seek specialist procurement advice in relation to any potential project.

5.2.2 Economics

We have estimated a cost of £2,535,000 for the installation of a 5 MW battery storage facility (including cell, balance of system and grid connection). Allowance would also need to be made for development costs e.g. planning application, surveys etc.

Revenue streams from storage projects are complicated and it is highly likely that the Council will need to work with an aggregator to ensure that they access the best sources of revenue at any given time.

Early battery storage projects were characterised by a revenue stack of 24/7 frequency response plus capacity market operated in a standalone fashion. Whilst this model was far from simple there are now several sources of revenue available, with the most lucrative options changing between capacity, ancillary services, trading and the Balancing Mechanism (BM).

Currently no one revenue stream holds the answer to a battery storage business case, revenue agility is required. An asset needs access to ancillary services, Distribution System Operator (DSO) services, reliable triad management, energy markets, BM, and any other services that emerge, to be truly optimised. Aggregators are currently indicating to potential clients annual revenues of £50,000 - £60,000 per MW for a 1-hour battery and £70,000 - £80,000 for a 2-hour battery. For a new build battery delivered from the early to mid-2020's we would expect an IRR between 9-10% to be achieved.

5.3 Next steps

- The Council needs to consider whether stand-alone battery storage would meet the new criteria for PWLB lending.
- The Council should consider the use of land for the three battery storage opportunities identified. Undertake engagement with stakeholders to achieve broad support and buy-in if a battery storage facility is considered a good use of the land available.
- The Council will need to submit a formal distribution grid connection application to secure grid capacity and engage with aggregators and technology suppliers to firm up costs and revenues.
- The Council should consider the addition of battery storage to any large-scale solar installation in order to hedge against price cannibalisation and improve viability.

Battery Storage – Key Points

Battery Storage projects will not directly contribute to the Council's carbon offsetting aims but are an essential part of the grid infrastructure required to deliver a decarbonised electricity system.

There is potential to investigate battery storage projects at the three sites identified. Battery storage should be considered on any large-scale solar projects to improve viability and hedge against price cannibalisation.

6 Onshore Wind

6.1 Background

Onshore wind turbines are also potential projects in which a local authority could invest. In wind energy projects, to produce renewable electricity and therby reduce their scope 2 carbon emissions. For example, is Bristol City Council became the first local authority in England to develop and own wind turbines. The two-turbine project was installed at the former Shell Tank site at Avonmouth and was commissioned in December 2013.

The most recent example is Cornwall Council's commercial investment into a single turbine (2.3 MW) project which became operational in September 2020. The turbine is sited on Cornwall Council land at Ventonteague, near Carland Cross, on the A30. The rationale for the turbine is to help Cornwall better manage its energy supply and power the equivalent of around 1,180 Cornish homes, representing a significant contribution towards the Council's climate emergency agenda. Cornwall Council own and operate the wind turbine. Earlier this year Orkney Islands Council submitted a planning application for a six-turbine wind farm which is in the process of being determined by Scottish Government. There are also micro wind turbine installation examples.

In comparison to solar PV, there are very few examples of local authority commercial scale development of onshore wind projects, with deployment being at the single or two turbine level and benefitting from niche land assets (such a Bristol City Council's project at Avonmouth). This is largely due to planning permission being one of the biggest barriers to project development for larger wind turbines and commercial wind farms. Project development is generally riskier than solar PV and can take up to several years to deliver.

Onshore wind is an established technology and offers one of the least-cost options for renewable energy supply; delivering electricity cheaper than conventional fossil-fuel technologies. Despite the strengths of onshore wind energy, widescale deployment of the technology in England and Wales last been largely restricted since 2015 due to the local and national planning requirements. Proposals often face local opposition, with visual impact, noise, site access and ecological impacts cited as reasons for objection. In the UK, 55% of historic onshore wind projects (between 1993 to 2019) were refused permission or abandoned (planning application withdrawn) by the developer.

Furthermore, legislation introduced under the Energy Act 2016 provided local authorities with the final say for all onshore wind energy projects and only allows wind turbines to be proposed for sites which have been identified within local or neighbourhood development plans. These changes effectively provided local communities with a veto to block the development of wind turbines.

In 2014 (the year before the planning changes were implemented) there were 156 onshore wind planning applications (51 in England). In contrast, only one application was submitted into the English planning system in 2020, with a capacity of 4.2 MW. This highlights the extent to which the local veto has all but stopped this form of development in England.

Historic planning consents in England have been at a total height of 125m. In recent years tip heights for schemes have generally increased to around 200m and the manufacturers are understandably concentrating on this larger market. In effect any

smaller schemes in England would therefore be unlikely to access the latest, most cost-effective turbines unless there is a softening of the planning consenting regime in England. Most commercial turbine manufactures (such as Enercon, GE, Nordex, Siemens Gamesa and Vestas) have phased out production of turbines below 150m to focus on the next generation of turbines at 180m tip heights and above. 180m tip height turbines have already been consented in Scotland, with projects at 200m+ also in the planning system.

Onshore wind turbines are typically located in areas with adequate wind speeds and in exposed locations free from obstacles like trees or buildings that can interfere with turbine performance. Table 7 outlines some of the key considerations for onshore wind site identification.

Table 7: Screening criteria for wind development

Key consideration	Comment
Wind resource/ viability	A minimum average windspeed of 6m/s+ will be required to obtain a reasonable return.
Monitoring wind speed	Wind speed monitoring is advisable prior to developing a wind energy project, to obtain more accurate data on wind speeds at the height of the proposed turbine. Wind monitoring also allows energy output for the project to be estimated. For commercial developers seeking project finance, this monitoring will be undertaken for a full year. Planning permission is also likely to be required for the wind monitoring mast.
Spacing	If more than one turbine is being installed, a space of at least five times the diameter of the rotor should be allowed between turbines to optimise power output by reducing wind shadowing and or turbulence.
Access	Access for the installation also needs to be taken into account. More remote locations will typically have a better wind resource, however access for vehicles to construct the turbine foundations and transport the turbine blades and other components to the project site may be constrained.
Grid connection	One of the main challenges wind development faces generally is the cost of procuring access to local grid infrastructure. Underground or overhead power lines can be very expensive, so the closer the site is to a suitable connection point the better.

Like for solar, sites identified for planned wind farms are subject to a formal application assessment. The National Planning Policy Framework aims to project Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest and areas of high national heritage value from negative impacts of wind farm development. In addition to this, most commercial scale onshore wind turbine applications will require an Environmental Impact

Assessment (EIA), which assesses the potential visual impacts and changes to landscape and biodiversity that could result. Other areas the EIA covers includes:

- archaeology, hydrology and geology
- aviation and radar
- noise and shadow flicker impacts
- ecological impact

New onshore wind projects cannot receive planning permission unless an area is identified as suitable for wind energy in a local or neighbourhood plan. Table 8 sets out other key designated areas which need to be avoided along with some typical set back distances for onshore wind projects.

Table 8: Key designated areas and set back distances for onshore wind development

Key consideration	Comment
Designated nature conservation areas	Designated nature conservation areas should be avoided. Where sites are used by birds, ecologists may recommend set back distances from the boundary of designated areas.
Designated landscape	Designated landscapes may or may not be suitable for wind turbines, depending on the reason for their designation and the impact that wind turbines may have on this. Views from designated landscapes to wind turbine sites will also need to be considered.
Bats	Hedgerows and woodland areas need to be avoided to reduce the potential impact on bats. Ecologists will recommend separation distances.
Residential properties	A setback distance of at least 600 - 800 metres from residential properties for large wind turbines is recommended. However, as local communities have a veto to block the development of wind turbines, engagement with the local community should on sought on setback distances.
Infrastructure	Minimum distances from roads, power lines, gas pipelines and other infrastructure, which are required by the Highways Agency and other infrastructure operators including National Grid.
Exclusion areas	Exclusion areas around airports, airfields and MOD land exists. Depending on the nature of the project, this should be determined in advance in consultation with the relevant body.
Communication equipment (telecoms)	Communications equipment need to be taken into account in consultation with the relevant telecoms operators such as Openreach.

6.2 Potential for onshore wind across the Council estate

We have reviewed the Councils lands assets and were not able to identify any suitable areas that could potentially support one/two commercial size turbines, or the deployment of micro turbines.

6.3 Onshore wind market review

An analysis of the BEIS Renewable Energy Planning Database quarterly extract for September 2020 indicates that there are 84 onshore projects greater than 5MW that have been consented between 2016 and 2020 that are still awaiting construction. This pipeline totalling 3.6 GW is comprised of 65 projects only one of which is in England. The remainder are in Scotland (65), Northern Ireland (13) and Wales (5). In terms of the MCC requirement (range 20MW to 60MW) there are 45 projects all of which are outside England. This would mean that the Council would need to be open and able to invest outside England. Developers of these projects have not historically sold assets or are already committed to existing investors.

The announcement that there will be a Contract for Difference (CfD) pot 1 allocation in 2021 (see Appendix 1) will also provide further certainty in this market and drive competition. Large projects or portfolios of projects in high wind speed areas in Scotland and Wales are likely to be the main beneficiaries in the fourth allocation round.

6.4 Next steps

- The Council needs to determine whether it can invest outside England.

- Approaches could be made to wind turbine developers who have assets which have not been constructed, but as these are generally tied in to a particular investor it is unlikely that would be available for purchase.

Onshore Wind – Key Points

Onshore wind is one of the most established technologies and offers one of the least-cost options for renewable energy supply and delivers electricity cheaper than conventional fossil-fuel technologies.

We have reviewed the Councils lands assets and were not able to identify any suitable areas that could potentially support one/two commercial size turbines, or the deployment of micro turbines.

Only one onshore wind application was submitted into the English planning system in 2020, with a capacity of 4.2 MW.

There is potential for the Council to investigate the acquisition of consented projects which are still to be constructed, however any acquisition would be outside England and it is not likely there would be a significant number (if any) assets available for a transaction of this nature.

7 Offshore Wind

7.1 Background

The Crown Estate manages the seabed around England, Wales, and Northern Ireland. The Energy Act 2004 vests rights to The Crown Estate to license the generation of renewable energy on the continental shelf within the Renewable Energy Zone out to 200 nautical miles.

In 2001, The Crown Estate announced the first UK offshore wind leasing round and since has run two further leasing rounds in 2003 and 2008. Thirty-nine offshore wind farms have been built by the sector, comprised of 2,292 turbines with an operating capacity of 10.4 GW. In September 2020, the Crown Estate awarded lease agreements to six proposed offshore wind project extensions in the waters around England and Wales (totalling 2.8 GW).

The Crown Estate is currently in the process of running its fourth leasing round, creating the opportunity for at least 7 GW of new projects. Prospective developers have been given the opportunity to identify and propose project sites within four broad seabed Bidding Areas. The Round 4 leasing process consists of five stages, the pre-qualification stage of which has already been completed. Invitation to Tender Stage 2 and bidding cycles are expected to take place in early 2021.

The Crown Estate is expecting to enter into a wind farm agreement lease with successful bidders in Spring 2022. Once seabed rights have been awarded, project developers will apply for the required statutory development consents. This is required as each project will be at least 400 MW. Developers will also require consent for the construction of the wind farm's offshore cable connection to the onshore grid and associated onshore permissions.

The development and consenting stage of the process is managed by the wind farm developer. The main offshore UK developers are: EDF Renewables, EDP Renewables, E.ON, Equinor, Innogy, Ørsted, Red Rock Power, ScottishPower Renewables, SSE and Vattenfall. A guide to an offshore wind farm was published on behalf of The Crown Estate and the Offshore Renewable Energy Catapult[5] in 2019. This guide sets out the costs associated with the development, construction and operation of an offshore wind farm. Development costs alone (development and project management) for a 1 GW installation are estimated at £120m. There are no speculative developers in this market and most projects are developed and owned by these companies

Once consents are granted, developers will then need to take part in CfD auctions to bid for support to build and run the wind farm. It is currently anticipated that Round 4 projects will become operational towards 2030.

There is no real market to purchase offshore wind turbines other than to participate in the auction for leasehold rights and then go on to develop assets.

[5] https://ore.catapult.org.uk/wp-content/uploads/2019/04/BVGA-5238-Guide-r2.pdf

7.2 Offshore wind – suitability

Offshore wind is not considered to be a suitable investment to meet the Council's requirements due to the scale of investment, the capacity required to acquire and develop assets and the extended timescale for assets coming on stream. The extended timescale would mean that an acquisition of this nature would not deliver the Council's carbon budget requirements.

Offshore Wind – Key Points

The MCC requirement would represent less than 1% of the current Round 4 opportunity.

The pre-qualification stage for Round 4 has already been completed.

Development costs associated with offshore wind are significant and any partnering/acquisition opportunity (given the MCC requirement) is likely to be extremely limited.

Round 4 projects are not forecast to become operational until the end of the decade and this would not meet the Council's carbon budget requirements.

8 Solar PV Market Review

8.1 Background

In order to meet its targets to offset 7,000 tonnes of CO_2e by 2025 the Council will need around 45-50 MW of solar PV generation (depending on location).

8.2 Opportunities within the Council's boundary

A review of Council owned sites and planning applications within the Council's area over the last two years has not provided any potential schemes within the Council's boundary.

8.3 Opportunities within the Greater Manchester Combined Authority boundary

Other councils in the Greater Manchester Combined Authority area are also exploring potential opportunities for solar farm sites. The ground mounted projects planned include solar farms at Chamber House farm in Rochdale (5 MW) and Kenyon Way in Salford (1.7 MW). Initial indications are that the size of the schemes are not large enough to benefit from a collaboration with the Council.

8.4 Out of area opportunities

We understand from discussions that the Council is open to financing an out-of-area investment if that is the best alternative and it is able to do so within the new PWLB lending criteria. Engagement with active solar PV has identified three potential projects that are in development and are available to purchase. The purpose of this section is to set out those opportunities and how the Council can position itself to be able to respond, either to these opportunities or to further market opportunities as they arise.

8.5 Solar PV market investments

The market for well developed, de-risked and subsidy backed solar PV projects remains high. This drives high prices and relatively low yields due to the secure nature of the income streams.

Local Partnerships has been tracking the pricing of operational disposals and have seen an upward value trend for operational (subsidy backed) solar PV transactions with prices of circa £1m per MW representing a current market benchmark. The majority of investors in the subsidised market are looking to move into the unsubsidised market. Those with large subsidised portfolios have substantial experience of managing merchant risk within these portfolios as a proportion of their income will be from trading wholesale power within their existing generation fleets.

We expect, and have already seen, that investors who need to continue to deploy capital into renewable generation and have experience in solar PV will invest in unsubsidised projects. The announcement that there will be a Contract for Difference (CfD) pot 1 allocation in 2021 (see Appendix 1) will also provide further certainty in this market and

drive competition. Without CfD, projects require a relatively long-term Power Purchase Agreement (PPA) to cover eight to ten years of operation at the start of the project in order to create financial certainty in the early years. Renewed interest from the funds has resulted in project developers returning to the market. There has been a significant shift towards larger projects with the smallest new projects typically exceeding 25 MW.

To date there have been relatively few transactions of operational subsidy-free solar projects. Gridserve purchased the first subsidy-free solar farm from developer Anesco as recently as August 2020 (for an undisclosed sum). From discussions with active solar PV developers we understand developers are targeting pricing in the range of £550,000 to £650,000 per MW for constructed and connected assets. This reflects the greater risk of variable income associated with subsidy free development in comparison to £1m per MW for subsidy backed operational projects. It is likely that any solar projects which secure CfD will be more valuable than those trading on a merchant basis. One of the main challenges renewable energy development faces is the cost of procuring access to local grid infrastructure. Grid connection cost is therefore a key driver of project viability generally and price expectation within the range where viability is established.

Private sector developers are able to access significantly lower construction pricing than has been seen to date in the public sector. Public sector construction pricing is similar to the costs quoted for completed projects, so serious consideration should be given to projects which can be bought as they become operational. These projects represent a cost-effective solution for the public sector with significantly better risk profiles than schemes in development or at shovel ready.

8.6 Useful life

In the pre-construction solar PV market we are seeing increased focus on the useful operating life of projects, with developers seeking to obtain planning consent for 40 years and including provisions to extend land leases to match. This has led to an increased understanding of the potential value and technical requirements of investors to apply this extended life. This will result in more aggressive assumptions being made by funds on the potential project duration when assessing the viability of projects.

8.7 Technological improvements

Panel manufactures have continued to increase the efficiency of their technology. The emerging technology within the industry (bifacial modules and single-axis solar trackers) provide greater land-use options and offer a higher yield. Bifacial solar panels generate power by exposing both sides of the cells to sunlight, increasing total energy generation. The technology is relatively new and reported outputs are higher but sufficient data is not yet available to allow reliable modelling to take place in the UK. This coupled with reducing panel costs and the significantly larger size of new developments is having a positive impact on the economics of subsidy free solar PV. We expect investors bidding into market opportunities to factor in these improvements.

Single access tracker systems are common in the United States but have not featured to any significant extent in the UK so far. Build and maintenance costs are higher, but so are yields. The Warrington BC/Gridserve sites are the first deployment of large-scale single access trackers in the UK (examples of technology are shown in Figure 10 and Figure 11 for information).

Figure 10: Traditional fixed mounting structure solar farm with standard solar panels[6]

Figure 11: Single access tracking solar farm with bi-facial panels[7]

[6] Image bsg-ecology.com
[7] First4solar.co.uk

8.8 Structuring

The buyer pool for large projects are all astute financial institutions who will employ different but effective structuring to ensure that their investors' tax exposure is limited. As such, assumptions on structuring are variable and can also impact value.

From discussions with active solar PV developers who sell assets there is recognition of the advantages that local authorities would bring to transactions (e.g. motivations for investment, low cost of borrowing, their own power purchase requirements, return expectations and the ability to look at longer term project time horizons). It is likely that local authorities would be competitive in bidding processes. Subject to acceptable valuation, there is also willingness to align transaction timelines with council approval processes.

8.9 Positioning the Councils to respond to market opportunities

The pipeline of UK solar farms (as at September 2020) was 10.6 GW across 442 sites. 24.8% of the entire ground-mount pipeline capacity in the UK is coming from sites planned to operate at between 40 and exactly 49.9 MW. 29.6% of projects fall into the 250 kW to 5 MW band. These smaller sites are often local-council, public sector or landowner-based projects. The key message for the Council is that developers don't have the capacity to build every consented project, but the Council will need to be flexible both on location and size of project.

From our engagement with active solar PV developers who sell assets, it is clear that smaller size projects are available (5-10 MW) however the viability of projects that we have appraised has been difficult to establish. We therefore recommend that the Council should shape its approval processes and governance around a single 40 – 50 MW stand-alone project (on a subsidy free basis), with the flexibility to invest in two smaller size projects should they be financially viable and the projects become available.

Appendix 3 sets out more detail about the nature of activities required in the purchase of a large solar farm. Transactions of this nature are relatively competitive and there is a need to be able to take decisions relatively rapidly. The Council should consider what preliminary and delegated authorities are required to allow it to properly analyse and progress a transaction of this nature.

8.10 Active Projects

We have identified three currently available projects across the UK.

Project A – North West – 30 MW

Project is in development. Grid and land rights appear to have been secured by the developer. Planning is yet to be submitted. Earliest energisation date Q4 2023. Community development company.

Project B – The Midlands – 45 MW

Project has grid and land rights secured. Planning consent has been granted for the scheme. This scheme has a grid connection at 132kV which will add some

complexity. Opportunity to purchase post construction. Earliest energisation date Q1 2022. Commercial developer.

Project C – Southern England – 46 MW

Project has grid and land rights secured. Planning consent has been granted for the scheme. Earliest energisation date Q3 2021. Commercial developer.

Table 9 sets out the different solar irradiance at these locations and compares them to the irradiance in central Manchester, together with the tCO_2e each scheme would offer between 2025 and 2038.

Table 9: Schemes irradiance and potential carbon savings (2025-2038)

Location	Forecast Irradiance (kWh/kWp)	Delta to Manchester	tCO_2e
Manchester	945	n/a	n/a
North West	958	+1%	48,238
The Midlands	989	+5%	74,699
Southern England	1065	+13%	82,227

8.11 Public Works Loan Board Consultation

On 26th November 2020 the UK Government published its response to the consultation on future lending terms for PWLB[8]. The aim of the consultation was to *"..develop a proportionate and equitable way to prevent local authorities from using PWLB loans to buy commercial assets primarily for yield, without impeding their ability to pursue service delivery, housing, and regeneration under the prudential regime as they do now."*

The Government has now introduced new terms to apply to all loans arranged after 26 November 2020. Under these terms the s151 Officer will need to confirm that there is not an intention to buy investment assets primarily for yield, based on their professional interpretation of the guidance.

In relation to specific concerns raised by some respondents (item 3.99 of the response to the consultation) that they carry out some capital spending on green or renewable energy developments which support the local authority's policy objectives to achieve carbon neutrality but were not necessarily located within the authority's wider economic area, the Government response was: "*The government will not restrict local authorities' ability to carry out capital projects in neighbouring districts or the authority's wider economic area*

[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938043/Response_to_consultation_Public_Works_Loan_Board_future_lending_terms_1.pdf

where these projects are for service delivery, housing, preventative action, or regeneration"

8.12 Next steps

- Develop sufficient outline business case authority to set up a decision making framework which allows the Council to act with sufficient speed to maintain market interest in a transaction whilst remaining within the decision making framework of the Council.

- Obtain in-principle support to enter into an exclusivity period/undertake project due diligence as opportunities arise.

- Review the project specific information in relation to the three currently identified projects and determine whether to pursue an exclusivity agreement in relation to any of these opportunities.

Market Opportunities – Key Points

There are opportunities to purchase solar PV schemes directly from developers, but these are unlikely to be within the Council boundary area.

50 MW schemes are available in the current market although the Council may need to show flexibility around actual sizing. The numbers of projects coming to the market are relatively small and the Council needs to be prepared to move at speed and be flexible in how they meet their requirement.

A budget of £ 27 - 30m would allow the Council to purchase sufficient assets to meet the requirements set out in this report.

The Council's s151 officer will need to be satisfied that an investment of this nature meets the new PWLB lending criteria.

9 The PPA alternative

A number of local authorities are exploring the route of purchasing 'green' electricity in order to meet their current carbon budgets.

Section 3.3 sets out the basis for carbon accounting for scope 2 emissions (grid supplied electricity). If dual accounting is to be used then good practice suggests there needs to be a very clear rationale for the inclusion of other electricity sources and in particular; additionality (i.e. demonstrating you triggered new capacity), traceability (i.e. how you can demonstrate where the power is generated) and permanence (i.e. long term arrangements that cannot easily be reversed) will be required to justify inclusion.

The duration of a PPA is an important factor in whether it would be legitimate to account for the carbon savings, with longer term agreements being beneficial. Longer term agreements however come at the risk of mismatch between the Council's requirements and the supply levels in the agreement. Longer term PPAs are likely to have a minimum supply requirement, below which the offtaker (i.e. the Council) will pay for power generated whether or not they are able to consume it.

If the Council were to pursue a green PPA there are two main scenarios i.e:

a) Purchase a 'green tariff' from a supplier

b) Direct purchase of electricity from a renewable energy generating station

9.1 Green Tariffs

A green tariff means that some or all of the electricity you buy is 'matched' by purchases of renewable energy that your energy supplier makes on your behalf. These could come from a variety of renewable energy sources such as wind farms and hydroelectric power stations. Renewable energy generation is demonstrated by the Renewable Energy Guarantees of Origin (REGO) certificates.

The Council's current supplier, nPower, offer tariffs for 10-15 years linked back to specific, identifiable generating stations.

9.1.1 Applying the tests of additionality, traceability and permanence

Before a green tariff is included in an organisation's carbon accounting it should meet the requirements of additionality, transparency and permanence.

I Additionality – green tariffs

Green tariffs rarely meet the additionality criteria as they may be part of an existing portfolio of assets. Furthermore, new green tariff customers will increase demand for green electricity which will be taken from the general portfolio of the provider, potentially making the general electricity supply from the provider to customers not on a green tariff more carbon intensive.

A green tariff is therefore unlikely to meet a specific additionality test even where it is from a clearly defined source. There is also nothing in the nPower agreement which

would preclude the supplier from applying for a CfD for the scheme. Where as scheme has CfD certainty it is very unlikely that the supply contract with the provider would be sufficient to meet the requirements of additionality.

II Traceability – green tariffs

Green tariffs should be able to provide REGO certificates for every unit of power consumed. Provided they are able to do this then potentially they do pass the transparency test, although it is preferable if the certificates are traceable to a single nominated source. REGO certificates can be traded independently of the source from which they originate which reduces their value in the eyes of some observers.

III Permanence – green tariffs

Permanence is the most difficult test for any form of PPA as they are often short term contracts, after which time there is no obligation on the accounting organisation to continue the arrangement. Whilst flexibility is often valued in PPAs it is to the detriment of accounting for the carbon saved.

There are no hard and fast rules for the length required of a PPA before it is considered to have a degree of permanence. Forecasts for decarbonisation of UK electricity range from 2030-2050 and arguably any green tariff would need to be for a period until grid decarbonisation has occurred i.e. 10-30 years. Most green tariffs are of a significantly shorter period than this.

9.2 Direct PPAs with a generator

It is possible to purchase electricity directly from renewable energy generators through a direct PPA agreement. This can either be synthetic or sleeved (see Appendix 1 for a description of the differences). A direct PPA with a specific asset that is not part of a larger pool of assets supplying a range of customers has a potentially stronger weighting in carbon accounting terms than a green tariff.

A PPA of this nature would require a procurement exercise to put it in place and could be on the basis of either a sleeved or synthetic PPA.

9.2.1 Applying the tests of additionality, transparency and permanence to a PPA directly with a generator

I Additionality

Any tender exercise could state that the generation capacity was not subject to any forms of subsidy and was new build generation. This would potentially meet the criteria of additionality.

II Transparency

In addition to the REGOs the Council would benefit from a direct relationship with the energy generator to demonstrate the source of the electricity consumed.

III Permanence

This will depend on the length of the PPA agreement. Current market PPAs are largely of the 5-8 year duration. Beyond this longer term arrangements are available but come at a premium of around 10%.

It may be possible to make a case for permanence in that the new generating asset would have been created because of the initial PPA, however it does not provide permanence to the decarbonisation of the Council's electricity supply.

10 Options Appraisal

This options appraisal has been based around the Treasury Green Book recommendations.

10.1 Options for Appraisal

The following options have been considered in this options appraisal:

1. Do nothing
2. Fair value solar PPA – direct with a solar farm operator
3. Fair value wind PPA – direct with a wind turbine operator
4. a) Asset purchase of 49 MW site in southern England with PWLB lending over 25 years
   b) Asset purchase of 49 MW site in southern England with PWLB lending over 35 years
5. a) Asset purchase of 46 MW site in the Midlands with PWLB lending over 25 years
   b) Asset purchase of 46 MW site in the Midlands with PWLB lending over 35 years
6. nPower wind PPA
7. nPower solar PPA

10.2 Preliminary appraisal – affordability

Before proceeding further with the options appraisal net present value (NPV) calculations were produced for all of the alternatives and compared to option 1 – 'do nothing'.

This modelling was undertaken by Local Partnerships on behalf of the council and utilises third party data from Aurora Energy Research (Aurora). Local Partnerships are subscribers to Aurora, who are a market leading provider of energy price forecast information. Using high quality forecast information for forward energy prices provides the council with the highest likelihood of a robust npv calculation. Aurora's information is the basis of their business and clients are tied with strict contractual terms that prevent the release of forecasts to non-subscribers. Local Partnership's agreement with Aurora allows them to use the information in financial modelling and to release the outputs of that modelling in a form where the original data cannot be reverse engineered, but not to release the financial models as these contain the embedded data sets. We have therefore included the assumptions for the financial modelling and the outputs of the npv calculations in this report.

Local Partnerships and Aurora have undertaken a workshop with council officers to ensure that the council understands the basis of the data and the financial models that produce the npv information used in this report."

10.2.1 NPV assumptions

All NPV calculations have been appraised over an 8 year and a 25 year period and compared to a 'do nothing' scenario based around ongoing purchase of wholesale

electricity. The 'do nothing' scenario relies on the Aurora Energy Research central power price curve for wholesale power. Table 10 shows the assumptions embedded in the NPV model.

Table 10 – NPV assumption fields in the model

	Input Data	
MCC total requirement (excluding schools)	45,000	MWh
Site 1 (southern England) Installation Size	46,092	kW
Site 1 P50 Generation Specific annual yield	1,065	kwh/kwp
Site 2 (the Midlands) Installation Size	45,000	kW
Site 2 P50 Generation Specific annual yield	989	kwh/kwp
Deterioration	0.40%	Module degredatior
Inflation	2.0%	
Inflation base year	2019	
npv discount rate	5.6%	
Differential between central and fair value	2.0%	
Solar sleeving costs (£ 6/MWh)	£0	per MWh
Wind sleeving costs (£ 7/MWh)	£0	per MWh

10.2.2 PPA Duration

An 8 year duration has been taken for the PPA agreements following a discussion with Aurora Energy Research, with the view being that prices for longer term PPAs would be higher than the values modelled. For the fair value PPAs it does not make a significant difference to the scenarios if the duration is longer as the prices revert to the Aurora solar central case less 2% adjustment for fair value. A more significant impact is seen in relation to the nPower PPAs, although the wind PPA offers considerably lower value in the short term where prices would be higher than modelled for the first four years.

The asset purchase models are unaffected as they are based on costs incurred rather than price paid. The gap between costs incurred and price paid increases over time so in all scenarios the asset purchase models look better over a longer duration.

10.2.3 Deterioration

The speed at which solar panel efficiency decreases over time. The assumed rate at 0.4% is within the industry standard rate, but less than the likely module guarantee rate of around 0.5% pa.

10.2.4 Inflation

2% CPI has been used throughout as this is the Government target figure. Base year relates to the base year for Aurora price information.

10.2.5 NPV discount rate

This is the Treasury Green Book rate adjusted for schemes which include inflation.

10.2.6 Differential between central and fair value

Adjustment applied to Aurora central solar price forecast curve to achieve the Aurora fair price. This price represents the price most likely to be paid by an offtaker when all factors are taken into account (such as transaction costs etc).

10.2.7 Sleeving Costs

Differential rates for wind and solar have been discussed with Aurora. We have not applied sleeving costs in the final models as they can be avoided by the use of a synthetic PPA agreement and destroy considerable value in all schemes (except the nPower options). Synthetic PPAs are compliant for greenhouse gas accounting (as confirmed with Anthesis).

10.2.8 Asset purchase schemes – traded balances.

As these schemes are not exactly sized to the Council's requirement there are differences between the energy produced and the energy consumed. With a synthetic PPA the Council will have PPAs in place with energy suppliers as well and these additional volumes can be included in these contracts. The models have therefore included for a revenue where there is over generation and for purchased electricity where there is under generation.

10.2.9 Operating and maintenance costs for asset purchase schemes.

The model allows for the following: £ 10,500 O&M contract including cyclical replacements, £ 1250 insurance, £ 2,800 rent, £ 2,000 rates, £ 2,500 asset management, £ 5,000 contingency and the Council's internal costs. All costs are per MW installed per year. The asset management service will in effect run the farm for you and manage the contractors, billing etc. The contingency amounts to around £ 230,000 pa and will allow the Council to have a member of staff who can deal with this and as well as providing general contingency to the investment. The costs allowed are all reasonably generous.

10.2.10 Finance period

The asset purchase scenarios have reviewed both a 25 year financing period and a 35 year financing period. A solar asset is anticipated to have a life of 35-40 years.

The 35 year asset financing scenarios have a residual balance on both schemes of around £ 11m at the end of year 25.

10.2.11 Post PPA assumptions for the 8 year PPA scenarios

For all of these scenarios (both nPower and the fair value agreement directly with an asset operator) the schemes revert to the fair value solar price curve for the respective technology after the end of the 8 year PPA period.

10.3 NPV outputs

Table 11 below sets out the outputs from the NPV exercise undertaken by Local Partnerships and utilising the confidential Aurora data.

Table 11: outputs from NPV comparison exercise

Manchester City Council Scenario Comparisons (February 2021)

			Total Cost (25 yrs)	Cost after 8 years	25 year npv	8 year npv
	With sleeved PPAs					
1.	Do Nothing (assumes Aurora wholesale plus inflation)		-£85,558,054	-£21,965,089	-£43,366,132	-£17,091,133
2.	Fair Value Solar PPA Option	V Do Nothing	£15,808,392	£2,593,361	£7,235,495	£1,966,242
3.	Fair Value Wind PPA Option	V Do Nothing	£22,385,253	£5,528,952	£11,169,161	£4,258,268
4.	Solar Own/Operate Option Site 1 (southern England)					
4. a)	Solar own and operate with 25 year finance (southern England)	V Do Nothing	£22,017,266	£3,055,525	£9,977,925	£2,207,730
4. b)	Solar own and operate with 35 year finance (southern England)	V Do Nothing	£30,147,626	£5,765,645	£14,403,842	£4,347,664
5.	Solar Own/Operate Option Site 2 (the Midlands)					
5. a)	Solar own and operate with 25 year finance (the Midlands)	V Do Nothing	£20,225,002	£1,081,277	£8,263,154	£629,010
5. b)	Solar own and operate with 35 year finance (the Midlands)	V Do Nothing	£28,230,442	£3,749,757	£12,621,068	£2,736,065
6.	npower wind PPA (£48.50) indexation 2.0%	V Do Nothing	£20,089,059	£3,232,759	£9,293,783	£2,382,890
7.	npower solar PPA (£47.10) indexation 2.0%	V Do Nothing	£16,988,517	£3,773,486	£8,076,710	£2,807,458

Several of the scenarios are effectively derivatives of the same option i.e. the fair value PPAs and the nPower PPAs together with the different finance options for the asset purchase options. The asset purchase options are not directly derivatives of each other as aside from variations in size and output the Midlands opportunity represents what might normally be available in the market where the southern England scheme is a particularly good one and may not be representative of what is available when the Council have decided on their preferred approach.

Recommendation 2: All options have positive NPV outcomes when compared with 'do nothing'. There is therefore a solid value for money basis to either enter into a suitable PPA or asset purchase agreement.

10.3.1 Options for Further appraisal

In order to keep the options appraisal to a manageable exercise, the best value alternatives of each of the derivatives have been taken forward into the next stage as follows:

1. A wind based PPA with nPower (current electricity supplier) linked to specific projects. This is for an 8 year duration and pricing has been obtained from nPower.
2. A wind based PPA direct with a turbine operator. This assumes an 8 year duration with pricing based around the Aurora Energy Research fair pricing model.
3. An asset purchase of a 49 MW solar farm post construction. The farm is based in southern England and terms have been discussed directly with the owners. Financing is through a 35 year PWLB loan at 1.46%.
4. An asset purchase of a 46 MW solar farm pre-construction. The farm is based in the Midlands and terms have been discussed directly with the owners. Financing is through a 35 year PWLB loan at 1.46%.

10.4 Criteria and weighting for options appraisal

The following criterial have been developed for the options appraisal based around the Green Book criteria of desirability, feasibility and viability.

The weighting figures are out of a maximum of 10 for each criteria (and balance to 100 overall and are shown in table 12). These represent the relative importance of different measures in reaching a decision and have been developed from the workshops run with the Council to develop their understanding of options and associated risks.

Table 12 – Weighting and criteria for options appraisal

Criteria	Weighting
Desirability	
Reduction of CO2e emissions by 7,000 tCO2e by 2025	10
Are CO2e savings lasting upto and beyond 2038 (this criteria is included as a measure of the permanence provided by the option)?	7
Is the option available to current MCC partners?	2
Feasibility	
What is the earliest implementation date?	7
How well does the option fit with the likely scope 2 emissions for MCC?	6
Does the option have reputational risks?	7
Does the option expose MCC to a risk of challenge through procurement?	7
Does the option expose MCC to a risk of challenge to its carbon accounting practice?	8

Criteria	Weighting
Viability	
What savings can be realised by the option during a typical 8 year PPA time horizon (NPV v do nothing)?	8
What savings can be realised by the option during a typical 25 year financing period for an asset purchase?	8
Are there savings available beyond 25 years? This measure is included to show whether an option provides cashable savings beyond year 25.	4
Are there viable mechanisms for adjusting supply volumes over time?	8
Does the option provide protection against energy price increases (short and long term)?	3
Are MCC able to resource the option with suitable capacity and capability?	5
What capital is required by MCC to implement the option?	5
What resources are required by MCC to manage the option on an ongoing basis?	3
Will the option positively impact the market?	2

10.4.1 Scoring methodology

Each of the criteria has a documented methodology by which each option is scored, these are set out in table 13 below.

Table 13 – Basis of scoring for each criteria

Criteria	Points allocation basis
Reduction of CO2e emissions by 7,000 tCO2e by 2025	10 points if 7,000 tCO2e reduction by 2025. Less one point for each -5%duction by 2025. Less one point for each -5%
Are CO2e savings lasting up to and beyond 2038 (this criterion is included as a measure of the permanence provided by the option)	0.5 points for each year of certainty offered for each year from year 5 onwards (all schemes provide certainty for at least 5 years)
Is the option available to current MCC partners?	1 point for up to 20% of partners supply that could be offered and 1 point for each additional 20%. To reflect flexibility remaining 5 points are as follows 5 points for agreement of 2 years or less, 4 points for 2-3 years, 3 points for 3-4 years, 2 points for 4-5 years, 1 point for 5-8 years
What is the earliest implementation date?	H2 2021 = 10 points, H1 2022 = 8 points, H2 2022 = 6 points, H1 2023 = 4 points, H2 2023 = 3 points, H1 2024 = 2 points, H2 2024 = 1 point
How well does the option fit with the likely scope 2 emissions for MCC?	First 8 years - within 10% = 6 points, within 25% = 4 points, less than 75% = 0 points. PLUS long term after year 8 - very flexible = 4 points, flexibility can be achieved (e.g. through sale or purchase outside the contract) =2 points, none = 0 points
Does the option have reputational risks?	Likely to occur and attract ongoing publicity as issue cannot easily be resolved = 0 points, could occur on a one off basis, but can be mitigated = 5 points, unlikely to occur = 10 points
Does the option expose MCC to a risk of challenge through procurement?	Existing framework can be used = 10 points, one off new procurement = 8 points, specialist advice to structure agreement = 6 points

Criteria	Points allocation basis
Does the option expose MCC to a risk of challenge to its carbon accounting practice?	Assumes all options can demonstrate that the energy is renewably produced via the issue of REGO certificates. Ability to demonstrate additionality = 5 points, PLUS ability to demonstrate permanence = 5 points
What savings can be realised by the option during a typical 8 year PPA time horizon (NPV v do nothing)?	(option value/value of best option)*10
What savings can be realised by the option during a typical 25 year financing period for an asset purchase?	(option value/value of best option)*10
Are there savings available beyond 25 years? This measure is included to show whether an option provides cashable savings beyond year 25.	Yes =10, No = 0
Are there viable mechanisms for adjusting supply volumes over time?	Assessed in two parts. Part 1 - flexibility in years 0-8. +/- up to 10 % = 2 points, +/- 25% = 5 points. Part 2 - rebalancing. Ability to rebalance supply volume at year 8 = 5 points, no = 0 points
Does the option provide protection against energy price increases (short and long term)?	Yes =10, Yes, but only for first 8 years = 4, No = 0
Are MCC able to resource the option with suitable capacity and capability?	Within existing capacity and skills = 10, will require some bought in capacity (up to £ 50k expenditure) = 6 points, will require significant additional support = 3 points
What capital is required by MCC to implement the option?	Capital requirement 10 points for nil capital investment. Less 1 point for each £ 5m capital investment required
What resources are required by MCC to manage the option on an ongoing basis?	Costs fully included or within existing resources = 10 points, - 3 points for each uncosted FTE required for support
Will the option positively impact the market?	Impact on the UK energy mix - up to 3 points. Sector leadership up to 7 points

10.5 Options Appraisal Outputs

Utilising the weighting and criteria set out in section 10.4 each of the four options has been appraised. The weighting scheme provides a score as a % with higher scores being a closer fit with criteria than lower scores.

A full copy of the options appraisal matrix is in appendix 5 to this report (Excel Workbook).

The outputs from the scoring exercise are as follows (table 14):

Table 14 – outputs of options appraisal scoring exercise

Option	Description	Score	Rank
1.	**nPower wind PPA.** A wind based PPA with nPower (current electricity supplier) linked to specific projects. This is for an 8 year duration and pricing has been obtained from nPower.	61%	4
2.	**Fair Price Wind.** A wind based PPA direct with a turbine operator. This assumes an 8 year duration with pricing based around the Aurora Energy Research fair pricing model.	72%	2=
3.	**Asset Purchase (Southern England).** An asset purchase of a 49 MW solar farm post construction. The farm is based in southern England and terms have been discussed directly with the owners. Financing is through a 35 year PWLB loan at 1.46%.	80%	1
4.	**Asset Purchase (The Midlands).** An asset purchase of a 46 MW solar farm pre-construction. The farm is based in the Midlands and terms have been discussed directly with the owners. Financing is through a 35 year PWLB loan at 1.46%.	73%	2=

10.6 Options Appraisal Summary

As all options represent better value for money than do nothing there is a clear case for developing and implementing a new regime in relation to the Council's electricity procurement.

The scoring exercise for the options appraisal has a clear front runner in the site in southern England, however this site represents a particularly good option and may not always be replicable in the market place if the Council are not able to act quickly enough to secure this option.

There is little to choose between a wind based fair value PPA and a more usual asset purchase alternative, although the financial modelling assumptions for the asset acquisition are more conservative.

The pursuit of a PPA agreement with a major electricity supplier is unlikely to represent the best alternative due to both value for money and carbon accounting compliance.

11 Risks and other considerations in decision making

11.1 PWLB risk factor

The options appraisal has not taken account of the potential PWLB lending risk in relation to an out of area asset purchase. This has been taken out to allow the Council to understand the best option in terms of delivery of its objectives.

The PWLB risk remains and before the Council could pursue and asset purchase strategy it would need to seek assurances from HM Treasury that borrowing for this purpose would not breach the PWLB lending terms. In relation to investment for yield there is a clear case that an asset purchase would represent delivery of the Council's decarbonisation targets and would represent value for money compared to existing arrangements to procure electricity. The more significant risk lies with the criteria to invest in the 'economic area' and this would need to be explored further.

Recommendation 3: Having undertaken a thorough options appraisal exercise the Council is now in a position to explore with HM Treasury whether or not an asset purchase would be compliant with PWLB lending terms.

11.2 Asset acquisitions

Market engagement has identified three potentially suitable schemes which are currently available and could meet some or all of the Council's requirement. In order to progress opportunities, the Council will need to take sufficient early decisions to enable it to enter into an exclusivity agreement and undertake due diligence. Speed of decision making is key to success in acquiring projects in a competitive market.

A number of local authorities have successfully invested in renewable energy generating assets and there are likely to be opportunities for other local authorities to follow suit. Whether it is better to seek to develop an asset, or buy one from a commercial developer, will depend on the opportunities available and how each local authority responds to individual challenges.

Local authorities should not assume that it will be more cost effective to develop their own schemes. Solar PV and wind developers have worked hard to drive down costs in recent years and bring considerable leverage and expertise to the market. Some of these schemes are likely to offer better value for money, and at less effort, than development of schemes from scratch.

An asset purchase would tie the Council's electricity costs to the cost of operating the asset and servicing debt raised; representing a saving of around 10-15% of current electricity costs. Predicting the costs of financing and operation is relatively straightforward and an asset purchase would therefore provide a degree of cost certainty to the Council's energy planning as well as potential cost savings.

If the Council's electricity demand diminishes over time, there would be the ability to sell any surplus generation to a third party.

Schemes which combine solar PV with battery storage will generally provide a better match against the Council's electricity usage profile and improved savings as fixed cost infrastructure can be shared across the two technologies.

11.3 PPA opportunities

In considering a PPA option the Council will need to balance its desire for flexibility with the need to demonstrate permanence in order to meaningfully account for the carbon saved. An agreement directly with a generating station is preferable to a green tariff from a larger energy supplier.

11.4 Preferred Option

Whilst the southern England site appears to be the preferred option the question of PWLB risk remains unresolved. There is a strong possibility that by the time this issue is resolved the southern England site will no longer be available.

Without the southern England site there is little to choose between a directly procured fair value PPA and an asset purchase in terms of the options appraisal exercise.

11.5 Risk Management

The Council's attitude towards risk and reward is likely to be the determining factor in making a decision between the options of a fair value PPA and an asset purchase. Table 15 sets out the key risks and the solutions they apply to.

Table 15: Summary of key risks

Risk Description	Asset Purchase	Fair Value PPA
Achieving the carbon benefits - production (i.e. the risk that specified volumes will not be available)	Low	Low
Flexibility risk – supply arrangement that no longer matches the Council's needs	Low/Medium	Medium/High
Wholesale electricity price inflation risk leading to higher than forecast electricity costs	Low	Medium – after end of PPA
Carbon accounting – additionality	Low	Low
Carbon accounting – permanence	Low	Medium/High
PWLB lending criteria	Possible	Low

11.5.1 Risk consequences and mitigation

This section sets out the impact of risks, the extent to which they are capable of being mitigated and the measures likely to be necessary.

11.5.2 Production Risks

These risks are associated with the ownership of an asset and whether it produces the electricity that was originally expected. The main causes of this risk are set out below together with methods of mitigation.

a. Failure to operate effectively or consistently. Mitigation is via a suitable operation and maintenance contract with an experienced contractor. The contract should include clear specifications of work and availability guarantees. Failure to produce the guaranteed levels of power should be covered in a two-year testing period at the end of the construction contract. Further mitigation can be afforded by the engagement of an asset manager.

b. Irradiance. Overall, there is no significant risk with irradiance as the data available has been collected over many years and is robust. There is however variance year on year in the levels or irradiance. Returns should match those in the original modelling in an average year – but some years will be better than others. Variance is likely to be less than 5% of gross yield.

c. Component failure. The construction contact should provide product warranties for all key components in the early years of the project and this should be managed as part of the operation and maintenance services contract. Ensuring the construction contract has suitable warranties is a key part of the technical evaluation of a project in due diligence.

11.5.3 Flexibility and permanence risks

Flexibility and permanence risks are closely related. The higher the degree of flexibility the lower the level of permanence. Permanence is dependent on how difficult it would be for the Council to reverse its decision and revert to standard grid supplied electricity. It is likely that the green tariff would not be able to demonstrate sufficient permanence to meet the criteria for carbon accounting, unless the contract is for an extended period.

The Council has a commitment to become a carbon neutral organisation by 2038, some 17 years into the future. The Council, in common with most local authorities, currently procures electricity over a much shorter timeframe.

The current short-term nature of electricity procurement does not require the Council to be able to accurately forecast its needs into the future. With estate rationalisation, building energy efficiency measures, electrification of heat and transport all due to take place in the coming years accurate forecasting is likely to be difficult.

All of the options are likely to require the Council to form a reasonable view on likely power requirements in 2038. The consequences under different arrangements are potentially different and are likely to be most manageable under the green tariff scenario. Under a direct PPA agreement it is likely there will be a ‘take or pay’ clause in the contract, committing the Council to a particular volume of supply for the period of the contract. There may be provisions for the council to sell surplus power to a third party if they do not require the power for their own consumption, but this arrangement could be complicated.

Under the asset purchase scenario there would be a need to have a PPA in place to sell power generated where this is in excess of Council requirements. This volume could

potentially be flexible. This leaves and element of price risk and a risk that the asset is significantly larger than the Council's actual requirement. in this circumstance there would be market opportunities to sell the asset either with or without the benefit of a PPA for the Council's ongoing electricity requirement.

11.5.4 Wholesale electricity price risk

Shorter term and more flexible arrangements carry the risk of prices rising faster than forecast and the Council incurring a higher level of spend as a consequence. Price forecast information shared with the Council suggests a real terms price increase in wholesale electricity prices in addition to inflationary increases until around 2035, thereafter there may be real terms reductions in electricity prices.

An asset purchase would tie the Council's electricity costs to a combination of the costs of operation and maintenance, debt and finance repayments and sleeving and balancing costs. This is potentially more predictable and less volatile than energy prices and may provide a higher degree of certainty at lower cost than the other alternatives.

The shorter the term any PPA or green tariff arrangement is, the greater the wholesale price risk. Agreements for 8-10 years may provide a significant variance to market when they end.

11.5.5 Additionality

Both the direct PPA and asset purchase options provide a strong argument for additionality and are therefore robust in carbon accounting terms.

11.5.6 Transparency and traceability

Directly linking supply to a single generating station provides the clearest link in carbon accounting terms and is met by both the direct PPA and the asset purchase options.

Green tariffs are more likely to rely on REGO certificates. Whilst a REGO certificate demonstrates that the supplier has purchased green energy to back this demand it does not provide any degree of assurance where that supply has actually come from (as certificates can be sold independently of supply). The separation of certificates and supplies also allows larger suppliers to direct more green power to direct green tariffs, whilst their standard supply mix becomes increasingly 'brown' as a direct consequence.

11.5.7 PWLB risk

There is no PWLB risk with the PPA options.

There is potential PWLB risk with the asset purchase option. The potential risk lies more around the location of the generating station than the nature of the activity. The ownership of renewable energy generation assets to cover the Council's own use is likely to meet the 'service delivery' criteria in the guidance. The more difficult issue relates to whether any asset would be deemed to be in the Council's Economic Area (and whether these criteria should be strictly applied as in doing so northern authorities would potentially be disadvantaged compared to those with higher levels of irradiance in the south).

11.6 Value for Money

Entering into a PPA or agreement asset purchase is likely to result in a cost reduction when compared to the Council's existing electricity supply arrangements.

Sleeving contracts offer significantly reduced value for money when compared with synthetic PPA agreements and unless there are compelling commercial reasons to use a sleeving contract a synthetic PPA would offer a preferred option.

Asset ownership reduces the price of electricity to the Council by eliminating the margin that would normally go to the owner of the generation asset. This would represent a saving of around 10% on the price currently paid for electricity.

If asset ownership is pursued then schemes in the south of England offer better value for money as the irradiance is higher (see section 3.2) and the £/tCO2e factor is therefore better.

12 Conclusions and Recommendations

12.1 Preferred option

This report sets out a total requirement of around 45 MW of solar PV or an equivalent PPA to enable the Council to meet its 2025 and 2038 targets.

The Council has two potentially attractive options available to it in order to meet the requirement; either the procurement of a suitable asset from a third party, or procurement of a PPA direct with a generating station suitable to meet carbon accounting requirements. There are no realistic options for the Council to meet the full requirement without pursuing one of these strategies. Both of these options represent value for money in relation to a 'do nothing' scenario.

Before a final decision can be made the Council need to understand the magnitude of the PWLB risk. If this risk is significant then the preferred option is clearly a direct PPA with a generating.

If PWLB does not represent a significant risk the Council needs to decide on its appetite for the long-term ownership of a generation asset. This option is likely to represent the best value for money but will require more resource to implement and maintain as well as introducing a new range of (manageable) risks.

12.2 Recommendation

Through this report we have made the following recommendations:

Recommendation 1: The Council should consider adopting a target of 45-50 MW of solar PV generation or equivalent direct PPA with a generating station (wind or solar).

Recommendation 2: All options have positive NPV outcomes when compared with 'do nothing'. There is therefore a solid value for money basis to either enter into a suitable PPA or asset purchase agreement and the Council should therefore change its current supply arrangements.

Recommendation 3: Having undertaken a thorough options appraisal exercise the Council is now able to articulate that asset purchase is a value for money option to achieve its carbon targets and should now explore with HM Treasury whether or not an asset purchase would be compliant with PWLB lending terms.

12.3 Next steps and no regrets actions

In order to deliver the strategy of reducing emissions by 7,000 tCO_2e by 2025, the Council will need to determine its preferred way forward. In order to do that the following are recommended:

1. Develop an understanding of the likely future requirements for electricity over the next decade. This should provide a view as to the likely overall requirements and the degree of certainty which could be attached to this forecast. In all scenarios there is a benefit in having reliable information on which to base assumptions.

2. Follow up established conversations in relation to the use of PWLB to ascertain whether an out of area asset purchase would be allowable under the new prudential regime.

If the Council determines that it wants to pursue an asset purchase strategy, then it will need to put in place measures to allow it to implement that strategy including:

3. Establishing sufficient delegated decision making powers to allow the Council to enter into an exclusivity agreement with a developer and invest in the necessary due diligence work to determine whether a project is a viable prospect.

4. Establish a supplier base to facilitate the due diligence work including technical specialists and lawyers.

5. Develop its financial and carbon modelling to ensure that all costs and benefits for a particular project are understood.

6. Determine whether or not to proceed further with due diligence in relation to any of the large-scale projects identified.

If the Council determines that it wants to pursue a PPA strategy, then it will need to put in place the following:

7. A clear policy in relation to carbon accounting, tested with the Council's advisors in this area, setting out how additionality, permanence and traceability will need to be demonstrated by any procurement.

8. A suitable procurement for a direct 'fair value' PPA agreement.

APPENDIX 1 Income from Electricity Generation - Subsidies and Power Purchase Agreements

Generation subsidies

Subsidy schemes for the generation of renewable electricity have all recently closed. There are however two potential support mechanisms which may be of benefit to the Council if electricity generated is exported. These are Contracts for Difference (CfD) and the Smart Export Guarantee (SEG).

Contracts for Difference

The Government has announced that there will be a 'pot 1' allocation of up to 12 GW in the CfD auction due to take place in late 2021. Pot 1 covers mature technology and includes solar PV and onshore wind. Wind projects generally have better economics than solar PV (especially wind projects in Scotland) and it is therefore unclear at this stage whether any solar PV projects will qualify for the price certainty that CfD brings. Arguably a CfD could also prejudice whether or not any scheme would be an allowable reduction in carbon accounting terms as it would be more problematic to sustain the proposition that the Councils' investment has led to the construction of new capacity.

Smart Export Guarantee Scheme

On 1 January 2020, the Government introduced the Smart Export Guarantee (SEG) scheme, which will enable anaerobic digestion, hydro, micro-combined heat and power (micro-CHP, with an electrical capacity of 50 kW or less), onshore wind and solar PV exporters with up to 5 MW capacity to receive payment for exported electricity. The SEG scheme replaces the feed in tariff (FiT) scheme that closed in Q1 2019. The purpose of the scheme is to guarantee a market for small scale renewable energy generation projects which export power directly to the grid.

Under the SEG scheme all licenced energy suppliers with 150,000 or more customers must provide at least one SEG tariff. The Government has set out that, in order to provide space for the small-scale export market to develop, there will not be any specified minimum tariff rate other than that a supplier must provide payment greater than zero at all times of export. The SEG licensees therefore decide how they want their SEG export tariff to work in terms of its rate, type and length. Storage is also eligible to receive export payments, although suppliers will be able to exclude 'brown' electricity from those payments and require the generator to put metering in place that isolates 'green' exports.

Under the scheme exported power must be metered with a meter capable of reporting exports on a half-hourly basis and meters must also be registered for settlement – though the SEG design is flexible and does not necessarily require half-hourly readings.

Power Purchase Agreements

All schemes will require some form of Power Purchase Agreement (PPA) to sell the electricity produced. It is unlikely that any scheme will secure a PPA at the outset for the life of the project, other than for self consumption by the Council. Different arrangements may apply during the lifespan of the project. This is particularly true under a private wire

arrangement when you need to consider when designing the infrastructure how you will export power to the grid if the arrangement subsequently changes.

Grid export PPAs come in two main forms, either relatively short-term arrangements generally with the major energy suppliers, or longer-term arrangements with a single (or small group) customer. Shorter term arrangements often offer a better spot price than the longer-term ones – but there is more exposure to general price volatility.

Longer term PPA agreements are generally with commercial third parties and seek to fix prices over a set period which helps protect those entering into the PPA (both buyer and seller) from market volatility. Large corporates, such as Google and Amazon have used corporate PPAs for their energy needs. There are currently 260 RE100 companies which have made a commitment to go 100% renewable and are taking actions such as entering into corporate PPA's to deliver on their RE100 and wider sustainability commitments.

Where power is sold as renewable energy the Renewable Energy Guarantees of Origin certificates (REGOs) will be sold with the electricity and therefore any greenhouse gas emissions savings will normally benefit the purchaser of the power rather than the owner of the renewable energy generator.

It is likely that the Council will be the PPA offtaker for an amount of supply equivalent to its electricity consumption. Any surplus power will need to be sold via a PPA agreement.. Key benefits gained from public bodies entering into a PPA with a third-party generator (or their own arm- length generator) are as follows:

Secure energy price - as part of any prudent risk management approach, entering into PPAs provides some insulation against volatile wholesale power markets;

Long term hedge – utilising a PPA gives access to longer date prices;

Additionality/provenance – purchasing directly from a new incremental green generator demonstrates commitment to reducing demand on carbon emitting fuel and provides clear linkage to supply for carbon accounting purposes;

Support UK climate change policy – the UK has made a legal commitment to net zero emissions by 2050. Many local councils have declared climate emergencies and have set targets to achieve carbon neutrality as early as 2030.

PPA structures

Whilst PPA structures continue to evolve there are typically three contract structures:

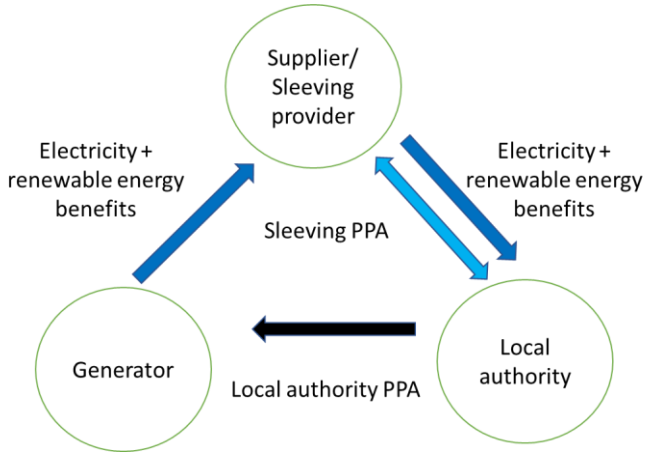
- Physical (also referred to as a 'sleeving' arrangement)
- Synthetic (or virtual)
- Private Wire

Physical PPA

A Physical PPA is between a customer and a generator who are remote from one another. The public electricity network provides the connection and network charges apply. This form of contract provides a direct and verifiable connection between the electricity produced and the electricity consumed.

An overview of the contractual arrangement is shown in Figure 11 below:

Figure 11: Contractual arrangements for a physical PPA with local authority as the off-taker



- Under this structure the off-taker enters into a long term PPA with a renewable energy generator to take some or all of the energy generated by its plant (or portfolio of plants) with a defined amount of power sold at a fixed price per MWh. Typically, the PPA will contain provisions for the sale and purchase of electricity and the allocation of any applicable renewable energy benefits, and the provisions governing that sale and purchase.
- The PPA will also include obligations to provide or procure certain metering and regulatory activities that can only be undertaken by licensed electricity suppliers (such as npower, Centrica etc). As such, the off-taker will need to enter into a back-to-back agreement with its licensed supplier under which the licensed supplier commits to undertake these obligations.
- In parallel to this arrangement the off-taker will have an electricity supply agreement with its licensed supplier under which electricity may be supplied to meet the off-taker's energy demands from time to time. The terms of supply under this supply agreement will take into account the electricity purchased under the PPA and passed through to the licensed supplier under the licensed supplier agreement. This ensures that the off-taker has the benefit of the fixed pricing for renewable energy under the PPA but the reliability of a supply agreement with a licensed electricity supplier to meet its day-to-day energy demands.
- There is generally a charge for the sleeving PPA with the sleeving provider which amounts to around 5% of the value of the wholesale electricity traded.

Both wind and solar developers have built up extensive pipelines of renewable energy projects which can give off-takers flexibility around choosing a PPA start date and the ability to dovetail into their long-term energy buying/risk management strategies. Options also exist for individual public bodies to aggregate smaller volumes to benefit from pricing.

Synthetic PPA

In a synthetic PPA structure no power is physically traded. Instead it is a purely financial structure where the off-taker and generator agree a defined 'strike price' to fix the cost of power between themselves for the power generated by a renewable energy facility. Each

party will then enter into separate agreements with their electricity/licenced supplier to sell/acquire electricity at the spot price.

A synthetic PPA works as a financial hedge in that if the spot price in a settlement period exceeds the PPA defined strike price, the generator pays the excess amount to the off-taker for power generated in that period. Where the market price for power is less than the strike price in a settlement period, then the off-taker pays the shortfall amount to the generator for power generated in that period.

A synthetic PPA is relatively simple to enact and provides price certainty to both parties. It can be harder to demonstrate a direct connection, but this should still constitute a valid carbon reduction for an authority participating as an off-taker, provided the contracts also secure the associated renewable energy accreditations.

Private Wire PPA

Private wire PPAs are concerned with the sale of electricity from a generator to an off-taker. Under this PPA agreement, power will normally be sold directly from the generator's facility to the off-taker, rather than being notionally passed through a national power grid. Typically, the generating facility only supplies power to the off-taker and will be located at, or close to the off-takers assets. Private wire PPAs are often utilised in conditions where the off-taker wishes to secure its own source of power. In the case of a local authority for example, an energy intensive depot or industrial estate owned by the local authority.

APPENDIX 2 – Procurement and risk management

For local authorities looking to own a renewable energy asset there are four basic options:

- Develop a project on owned land
- Develop a project on third party land
- Acquire project rights (land agreements, planning consent and grid connection offer) from a commercial developer prior to construction
- Acquire a fully built and commissioned project

Table 8 below sets out the pros and cons of different the different approaches.

Table 8 – Options for Project Acquisition and Development

Option	Potential Advantages	Things to consider
Self-develop on your own land	• No rental payments • No need to acquire land rights and establish clean title • No onerous restrictions or lease end date • Likely to be within the geographical boundary of the authority	• Is suitable land available • Will you be forgoing an existing income stream? • Do you have another use for the site? • Reputational issues if the site is in proximity to housing or has been promised for another use • Do you have the skills and capacity for the development? • Are you prepared to risk the development costs? • Design, procurement and construction risks to be managed
Develop a site on third party land	• Identify site for its suitability (both size and location) rather than its ownership • Wider search area and therefore more chance of finding a viable grid connection or private wire	• Viability model will need to account for landowner rent • Capacity to acquire the site • Time constraints introduced through the land acquisition period (for example option periods) • Asset lifespan limited by lease arrangements • Do you have the skills and capacity for the development? • Are you prepared to risk the development costs? • Design, procurement and construction risks to be managed • Whether the development is speculative and therefore not able to meet PWLB criteria

Acquire project rights from a third party	• Removes development risk, avoiding potentially abortive costs and providing certainty Land rights, accepted grid offer, and planning consent will be in place significantly reducing capacity required in the authority to deliver the project	• Viability model will need to account for the landowner rent and for costs of acquiring the project rights • Asset lifespan limited by lease arrangements • Design, procurement and construction risks still to be managed • Project rights are well sought after in a competitive market. A local authority can potentially lack credibility as a purchaser compared to a financial institution who has undertaken several similar transactions • Rights are unlikely to be available at a scale or location which is preferable to the authority (bear in mind for example managing construction of a project several hundred miles away) and flexibility may be required
Acquire a completed project from a third party	• Removes development and construction risks, avoiding potentially abortive costs and providing certainty • Land rights, accepted grid offer, planning consent and functioning asset will be in place significantly reducing capacity required in the authority to deliver the project • Private sector developers often prefer to sell post construction and commissioning Private sector contractors can procure more freely and consequently often build at a price significantly lower than the public sector. Quality may also be higher due to ongoing relationships with construction companies	• Viability model will need to account for the landowner rent and for costs of acquiring the project – although this may be less than the combined cost of acquiring project rights and constructing the asset through public procurement • Asset lifespan limited by lease arrangements • Projects are well sought after in a competitive market. A local authority can potentially lack credibility as a purchaser compared to a financial institution who has undertaken several similar transactions • Authorities will only have the ability to bid on existing projects and cannot therefore drive scale or location

Risk Management

Development of renewable energy projects carries a number of risks which need to be managed and mitigated. Key areas of risk are:

1. Development risks – particularly in relation to land rights, availability of grid connection, planning risks and viability. Whilst local authorities possess many of the necessary skills in relation to land rights and planning, they are likely to require specialist support in obtaining and managing grid connection offers and in assessing project viability.

2. Construction and procurement risks – these relate to ensuring that the asset delivers the levels of electrical production anticipated by the business case. Much of this risk can be mitigated by selection of an appropriate form of contract with suitable production guarantees, accompanied by the appointment of a competent technical advisor.

3. Operational risks – these largely relate to ensuring that revenues are as anticipated in the business case. Many of these risks can be mitigated against by appropriate forms of contract, strong technical support, contractual guarantees on availability and appointment of an asset manager.

4. Income risks - These are a combination of production and price. Production risks can be mitigated against by strong build and maintain contracts transferring as much production risk as possible to the contractor.

   Price risk is key in assessing viability. BEIS (Department for Business, Energy and Industrial Strategy) produce forecasts for wholesale electricity prices, but these are not technology specific. It is likely as renewable energy generation becomes more prevalent that differential pricing will prevail, with lower price being offered when there is over production. Local Partnerships use Aurora Energy Research (Aurora) forecast data in the production of financial information and we would recommend that the Council purchases appropriate data from Aurora if they want to proceed with either development or acquisition of a scheme.

APPENDIX 3 – Solar Farm Acquisition Briefing Note

Purpose

This briefing note is to provide the Council with background information about the processes and resource requirements associated with the acquisition, ownership and operation of a solar farm. It is not a definitive guide and has been provided to build general awareness and to aid understanding.

Acquisition Process

At this stage we are concentrating on acquiring a site which will be purchased as it becomes operational, the process may vary (with additional steps) if a shovel ready scheme was being contemplated.

Figure 12 on page 44 sets out the most common route for a transaction of this nature to take, together with tasks to be undertaken during each stage of the process. In general, Stage 1 (initial appraisal) takes 4-8 weeks depending on the urgency of the vendor and speed at which the purchaser is willing to respond.

Stage 2 (due diligence) typically takes around 6-12 weeks to complete depending on how well kept the vendor's records are and how hard the purchaser pushes their contractors.

Stage 3 (completion and commissioning) of the process takes a further two years and ensures that the solar farm produces the electricity guaranteed under the terms of the design and construction contract.

Figure 12: Acquisition process

Council Resources required

This section sets out the key tasks and likely time involvement required at the various stages of acquisition and during the operational phase of the project.

I Acquisition Stage 1: Initial Appraisal

The purpose of this stage is to determine whether you want to make an indicative offer. Resources to support that include the ability to model the potential financial position and the ability to make the decision to make an offer.

The offer is only indicative and can be withdrawn by the purchaser at any time, right through until the point of completion. Equally the vendor can withdraw the site from the transaction, but the exclusivity agreement would prevent them from commencing discussions with any third parties during the exclusivity period. These agreements are generally well honoured within the renewables industry.

Council officers are currently determining the resources required to put the Council in a position to make an indicative offer and ensuring that necessary briefings and decisions are being properly taken.

II Acquisition Stage 2: Due diligence

During this stage the Council will need resources to procure or appoint the following workstreams and to manage input:

1. Land legal advisors to review all land rights associated with the development. This will generally include full legal searches, review of lease and option documentation and the review of all other land rights required to ensure the scheme can be accessed and connected to the grid. Agreements with the network operator will also need to be reviewed to ensure they have been properly entered into. Some vendors (although not all) will provide a certificate of title which simplifies this process to an extent.

   If acquisition is via an assignment of project rights (as opposed to purchase of the SPV) then the land agreements will require assignment to a new target entity.

2. Planning consultants – to review the planning consent and any associated conditions and advise as to whether they have been fully complied with. Advice should be sought as to the extent of any gaps in the compliance and any ongoing requirements the operator of the site will need to comply with.

3. Technical Assessment. Ideally a technical advisor (TA) will be engaged as soon as possible to review the design and forecast output. The TA should provide a full design review and energy yield assessment. In addition, it would be advisable for the TA to monitor construction quality and oversee the testing and handover

procedure under the EPC contract.

4. Grid offer. The grid offer and acceptance should be checked by commercial lawyers to ensure that they have been validly accepted. The grid offer must be novated to the SPV. If acquisition is via an assignment of project rights (as opposed to purchase of the SPV) then a novation agreement will be required from the network operator.

5. Commercial legal and tax advice. This relates to the overall structure of the deal and preparation or review of the transaction documents. There is likely to be a significant commercial input to this dialogue, bringing together any due diligence concerns into conditions precedent being specified in the contracts.

Whilst the technical input can be procured, the Council will need the resource capacity to procure and instruct specialists, project manage the process, negotiate with the developer and write a business case prior to completion of any transaction. It is typical for transactions of this nature to require some negotiation and hands on resolution of issues during the transfer process. Understanding the risks and potential routes to resolution is key to ensuring the transaction either progresses to completion or is terminated at an appropriate stage.

The Council will also need to consider any potential milestone payments and determine whether it has the necessary skills and expertise to certify such payments. These can be supported by the TA if their role is sufficiently scoped.
Alongside the negotiation with the developer, the Council would also need to prepare for owning an operational solar farm – key activities would include:

1. Appointment of an energy supplier and offtaker for the site. Even if you are planning on acquiring the power you will need some form of offtake or sleeving contract. Meters at the site cannot be installed without a supplier appointed (so this may initially be put in place by the vendor – but you will need clear input to the process).

2. Review how and when you can start to purchase the power and put the necessary agreements in place. Put arrangement in place to sell any surplus power.

3. Write the business case and obtain the approvals for the transaction.

Bearing in mind the timescales (i.e. up to 12 weeks), it is a relatively intense process and will require a full-time dedicated officer, with further specialist internal and external support also being required.

III Acquisition Stage 3: Completion and Commissioning

Once the full business case is approved and the contracts exchanged the solar farm will be operational.

The first two years of operation are critical as it is during this time that you can properly assess whether the solar farm is producing the energy guaranteed by the EPC contractor. The Council will need technical support during this period to assess the ongoing testing and to ensure that calculations are properly carried out. This could be

achieved either by extending the services provided by the TA to cover this period or by the appointment of an asset manager.

Asset managers work on behalf of the client and perform an 'intelligent client' function. A typical asset manager scope of services includes ongoing optimisation/ analysis, management of the O&M contractor, review of real time monitoring information and accounting, bookkeeping/ filing accounts etc. Generally, this costs around £2,000 - £3,000 per MW pa plus VAT. Whilst an asset management service is not cheap, the costs are often offset by improved performance and income.

The Council will need to determine whether they need and can afford an asset manager and procure a suitable one if required. An asset manager can also be used to help the Council scope an ongoing O&M contract and provide support during the procurement process if required.

Time commitments required will eventually reduce and this is typically achieved by procuring the right support to the project, although these contracts will still require management and periodic re-procurement.

Without an asset manager the solar farm will require around 1 day per week of staff time to monitor outputs, manage bills, etc. With an asset manager the requirement will be less, but there will still be an ongoing requirement of 1 day per month. In addition to this further resource will be required when any agreements need re-procurement, health and safety incidents occur, insurance incidents occur or if there is any other material change in circumstances.

APPENDIX 4 – Review of ground mounted solar PV opportunities on land assets owned by the Council

Site	Commentary regarding suitability for solar PV development
Clayton Vale	Clayton Vale is an area of green space in Clayton, Manchester, through which the River Medlock flows. Former landfill site which was redeveloped in 1986. The area is now a natural habitat for wildlife and it has been designated a Local Nature Reserve
Tweedle Hill/Plant Hill	Tweedle Common is a former landfill site that has been reclaimed as open space. It sits north of Plant Hill Road adjacent to Plant Hill School. It is characterised by relatively flat grass land and some tree planting. Westwards from Plant Hill Park is an expanse of three natural open spaces split by French Barn Lane and Chapel Lane. The site is enclosed on all sides by urban development.
Shack Liffe Green	A former landfill site which was reclaimed in the late 1970's. The site is nestled between the houses of Horncastle Road and Boggart Hole Clough Park. The site has received minimal intervention and as a result now has a very diverse habitat with ecological value.
Queens Road Tip	Ongoing urban development at the site. Forms part of Manchester Fort 2020 Vision and Development Framework. Consideration for battery storage.
Church Lane Church Lane North	Both sites reclaimed as open space containing informal footpaths. Currently used for recreational usage and enclosed on all sites by residential properties.
Matthews Lane	Site forms part of Nutsford Vale which is a park and community wildlife space. The site is located between Matthews Lane and Longsight Road, behind the Gorton Mount and Grange Schools. Former landfill site which has been turned into an area of recreation and wildlife preservation which is managed by The Friends of Nutsford Vale.

Cringle Road	Site is allocated as an Environmental Improvement Area. Enclosed by residential properties and Highfield Country Park.
Ivy Green Road	Restored former landfill site turned into green woodland space. Site joins onto other woods and meadows extending alongside the River Mersey. The site forms part of Chorlton Ees and Ivy Green Nature Reserve.
Parrs Wood Road	Site forms part of the nature reserve of Stenner Woods, Millgate Fields and the River Mersey. Millgate Fields are adjacent to Environment Agency Flood Zones 2 and 3.
Crescent Road	The area is predominantly residential in character. The land area forms part of the Abraham Moss College estate. No firm demand headroom at closest grid connection point (Cheetham Hill (33 kV / 6.6 kV)).
South of Blackley New Road	Former landfill site which was reclaimed and landscaped in the early 1980s. Site forms part of the wider Blackley Vale. Significant levelling works would be required to facilitate the any development. Large pond adjacent to the site.
Russett Road/Factory Lane	Parcel of land contains substantial tree coverage. Forms a tree corridor between residential properties.
Rear of Fairway	Land predominantly consists of substantial tree coverage offset from residential properties. Land contains a network of footpaths. Forms part of Moston Fairway nature reserve which is maintained by the Wildlife Trust.
Graver Lane	Parcel of land contains substantial tree coverage. Forms a tree corridor between residential properties.
Scotland Hall Road	Small land parcel adjacent to four high rise flats. Site area also contains a recreational ground. Enclosed by residential properties and railway line and neighbouring Clayton Vale.
Annie Leigh Playing Fields, Mount Road	Site forms part of Gorton recreational ground, consisting of a children's play area, multi-use games area and football pitches.
Barlow Hall Farm	Site contains substantial tree coverage and is adjacent to Chorlton Water Park, which is a local nature reserve. Installation of a solar farm on the site would require removal of significant areas of

	scrub vegetation. Grid connection would require crossing the River Mersey. Closest grid connection point is South Manchester 132 kV GSP. Connecting a small solar PV scheme at this voltage is unlikely to be viable.
Sand Street, Collyhurst	Small embanked land parcel adjacent high-rise flats. Site enclosed by residential properties.
Rear of Romer Avenue	Parcel of land contains substantial tree coverage. Forms a tree corridor between residential properties.
Fitzgeorge Street	Small land parcel near high rise flats. Enclosed by residential properties, a railway line and urban development.
Riverdale Road, Blackley	Parcel of land contains substantial tree coverage. Forms a tree corridor between residential properties.
Bluestone Road	Small land parcel which lies between a cemetery and allotments.
Joyce Street	Small land parcel. Enclosed by residential properties and a railway line.
High Bank	Small land parcel enclosed by residential properties. Land parcel contains recreational use sports pitches.
Abbey Hey Tip	Small land parcel which forms a corridor between surrounding residential properties.
Harpurhey Road	Small embanked land parcel. Adjacent to weir and reservoir.
Pike Fold Lane	Site contains substantial tree coverage with a network of paths.
Bradford Road, New Viaduct Street, Cambrian Street	Very small land parcel of scrub vegetation enclosed by gas works and railway line. No firm demand headroom at closest grid connection point (Eastlands (33 kV / 6.6 kV)).
Great Ancoats Street	Small land parcel containing significant tree coverage, enclosed by residential properties.
Crabtree Lane, Rear of Eva Bros	Very small land parcel enclosed by urban development and allotments. The site is fairly isolated, however there is no firm demand headroom at the closest grid connection point (Bradford (33 kV / 6.6 kV)).

Princess Road / Kenworthy Farm	Land parcel enclosed by substantial tree coverage forming part of Kenworthy Wood. The site contains a network of walking paths and cycle tracks. Closest grid connection is South Manchester 132 kV GSP. Connecting a small solar PV scheme at this voltage is unlikely to be viable.
Princess Parkway	Site currently forms part of Northenden golf club.
Airport Woodhouse Park	Very small isolated land parcel. Consideration for battery storage.
Former Stockport Branch Canal Footpath	Canal footpath
Bradford Gas Works	Existing car park area adjacent to the Etihad Stadium. No firm demand headroom at closest grid connection point (Eastlands (33 kV / 6.6 kV)) to support solar PV. Consideration for battery storage connecting into the Bradford (33 kV / 6.6 kV) substation.

Site	Ground Mounted Solar PV				Grid Management Services
	Land **Size, location and access**	**Planning**	**Technical**	**Grid** **Firm demand availability for solar PV, connection length, connection voltage**	**Potential for Grid Management Services**
Clayton Vale					
Tweedle Hill/Plant Hill					
Shack Liffe Green					
Queens Road Tip					
Church Lane					
Church Lane North					
Matthews Lane					
Cringle Road					
Ivy Green Road					
Parrs Wood Road					
Crescent Road					
South of Blackley New Road					
Russett Road/Factory Lane					
Rear of Fairway					
Graver Lane					
Scotland Hall Road					
Annie Leigh Playing Fields, Mount Road					
Barlow Hall Farm					
Sand Street, Collyhurst					
Rear of Romer Avenue					
Fitzgeorge Street					
Riverdale Road, Blackley					
Bluestone Road					
Joyce Street					
High Bank					
Abbey Hey Tip					
Harpurhey Road					
Pike Fold Lane					
Bradford Road, New Viaduct Street,Cambrian Street					
Great Ancoats Street					
Crabtree Lane, Rear of Eva Bros					
Princess Road / Kenworthy Farm					
Princess Parkway					
Airport Woodhouse Park					
Heaton Park					
Former Stockport Branch Canal Footpath					
Bradford Gas Works - **solar carport**					
Land south of Wythenshawe Hospital					

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Manchester City Council
Report for Information

Report to: Environment and Climate Change Scrutiny Committee – 14 October 2021

Subject: Overview Report

Report of: Governance and Scrutiny Support Unit

Summary

This report provides the following information:

- Recommendations Monitor
- A summary of key decisions relating to the Committee's remit
- Items for Information
- Work Programme

Recommendation

The Committee is invited to discuss the information provided and agree any changes to the work programme that are necessary.

Contact Officers:

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

None

1. Monitoring Previous Recommendations

This section of the report lists recommendations made by the Environment and Climate Change Scrutiny Committee. Where applicable, responses to each will indicate whether the recommendation will be implemented, and if it will be, how this will be done.

Date	Item	Recommendation	Response	Contact Officer
13 January 2021	NESC/21/06 Monitoring and Compliance – Construction Sites	Recommend that Officers, in consultation with the Executive Member for Environment, Planning and Transport arrange a briefing session for Members of the Committee that provides an overview of a range of activities that included, but not restricted to planning and related enforecment; roles and responsilibities and Traffic Regulation Orders.	A response to this recommendation has been requested and will be reported back once received.	Julie Roscoe Director of Planning, Building Control and Licensing
22 July 2021	ECCSC/21/11 Climate Change Action Plan Quarterly Progress Report: Q1 April - June 2021	That every school on a main arterial route with high volumes of traffic have a tree planting plan included as part of the tree strategy to promote clean air.	A response to this recommendation has been requested and will be reported back once received.	Julie Roscoe Director of Planning, Building Control and Licensing

2. Key Decisions

The Council is required to publish details of key decisions that will be taken at least 28 days before the decision is due to be taken. Details of key decisions that are due to be taken are published on a monthly basis in the Register of Key Decisions.

A key decision, as defined in the Council's Constitution is an executive decision, which is likely:

- To result in the Council incurring expenditure which is, or the making of savings which are, significant having regard to the Council's budget for the service or function to which the decision relates, or
- To be significant in terms of its effects on communities living or working in an area comprising two or more wards in the area of the city.

The Council Constitution defines 'significant' as being expenditure or savings (including the loss of income or capital receipts) in excess of £500k, providing that is not more than 10% of the gross operating expenditure for any budget heading in the in the Council's Revenue Budget Book, and subject to other defined exceptions.

An extract of the most recent Register of Key Decisions, published on **1 October 2021**, containing details of the decisions under the Committee's remit is included overleaf. This is to keep members informed of what decisions are being taken and to agree, whether to include in the work programme of the Committee.

There are no Key Decisions currently listed within the remit of this Committee.

Environment and Climate Change Scrutiny Committee
Work Programme – October 2021

Thursday 14 October 2021, 10:00 am (Report deadline Monday 4 October 2021)				
Item	**Purpose**	**Lead Executive Member**	**Lead Officer**	**Comments**
Waste, Recycling and Street Cleansing Update	This is the annual update report that provides an update on progress in delivering waste, recycling, and street cleansing services and key priorities for the future. Further describing how this activity contributes to the climate change agenda; the work undertaken with partner organisations and an update on the Government's Waste Strategy.	Cllr Rawlins	Heather Coates Fiona Worrall	
Climate Change Action Plan - Quarterly Update report	To receive and comment upon the Manchester Climate Change Action Plan quarterly update report.	Cllr Rawlins	David Houliston Mark Duncan	
Manchester Climate Change Framework and Implementation Plan 2.0 – Consultation Two Outcomes	To receive a report that describes the outcomes of consultation two undertaken in relation to the development of Manchester Climate Change Framework and Implementation Plan 2.0.	Cllr Rawlins	Manchester Climate Change Partnership and Agency	
Large Scale Renewable Energy Generation Feasibility Study	To provide an update on the outcome of a feasibility study on the potential for large scale renewable energy generation to deliver 7000 tonnes of CO2 savings by 2025 as per the action contained in the Climate Change Action Plan.	Cllr Rawlins	Carol Culley David Houliston Mark Duncan	Executive Report

Overview Report	This is a monthly report, which includes the recommendations monitor, relevant key decisions, the Committee's work programme and any items for information.	-	Lee Walker	

Thursday 11 November 2021, 10:00 am (Report deadline Monday 1 November 2021)				
Item	**Purpose**	**Lead Executive Member**	**Lead Officer**	**Comments**
Initial Budget proposals 2022/23	To receive a short update on the Council's budget position and process and any implications and draft proposals for any services in the remit of this committee	Cllr Craig Cllr Akbar Cllr Rawlins	Carol Culley	
Flood Management Strategy	To receive a report on the approach to flood management across the city, this report shall include: - How this is coordinated locally and how this is delivered with neighbouring authorities that impact on Manchester. - Flood Risk Management and Resilience. - Lessons learnt from previous recent events. - role of the Civil Contingencies Unit. - Information on the strategies and planning in relation to local reservoirs.	Cllr Rawlins	Fiona Sharkey	Representatives from the Environment Agency to be invited. Invitation to be sent to Cllr Simcock to speak on his visit to the Environment Agency Control Room.
Neighbourhood Working to address climate change	This report will provide information on how the Neighbourhood Teams are supporting local communities to deliver climate change. This will include an update on the In Our Nature programme pilot schemes; describing the approach and outcomes of partnership working and information on the delivery of active travel.	Cllr Rawlins	Shefali Kapoor	

Manchester City Council Estates Decarbonisation	To receive a report that describes the activities and progress to date the decarbonisation of the Manchester Council Estate.	Cllr Rawlins	Richard Munns	
Overview Report		-	Lee Walker	

Thursday 9 December 2021, 10:00 am (Report deadline Monday 29 November 2021)				
Item	**Purpose**	**Lead Executive Member**	**Lead Officer**	**Comments**
Manchester Airport	To receive a report that considers the actions taken to reduce carbon emissions at Manchester Airport and an update on the progress made to reduce aviation related carbon emissions.	Cllr Rawlins	David Houliston	
Grounds Maintenance and the use of pesticides	To receive an update report on the approach to the use of pesticides when delivering grounds maintenance. This report will also provide an update on any relevant information relating to the service that falls within the remit of this committee.	Cllr Akbar	Matthew Bennett	See 'Manchester's Park Strategy – Progress through the Pandemic' considered June 2021.
Overview Report				

Thursday 13 January 2022, 10:00 am (Report deadline Friday 31 December 2021)				
Item	**Purpose**	**Lead Executive Member**	**Lead Officer**	**Comments**
Climate Change Action Plan - Quarterly Update report	To receive and comment upon the Manchester Climate Chane Action Plan quarterly update report.	Cllr Rawlins	David Houliston Mark	

			Duncan	
Food Sustainability	To receive a report that provides an update on the work undertaken to support communities around the area of food sustainability and to provide an update on the work of the Manchester Food Board.	Cllr Rawlins	Angela Harrington	
Overview Report				

Thursday 10 February 2022, 10:00 am (Report deadline Monday 31 January 2022)				
Item	**Purpose**	**Lead Executive Member**	**Lead Officer**	**Comments**
Budget proposals 2022/23 - update	Consideration of the final budget proposals that will go onto February Budget Executive and Scrutiny and March Council.	Cllr Craig Cllr Akbar Cllr Rawlins	Carol Culley	
Green and Blue Infrastructure Strategy	To receive an update report on the Green and Blue Infrastructure Strategy. This report will also provide an update on the implementation of the Manchester Tree Strategy.	Cllr Rawlins	Julie Roscoe	
Manchester Climate Change Framework and Implementation Plan 2.0	To receive and comment upon the Draft Manchester Climate Change Framework 2.0.	Cllr Rawlins	Manchester Climate Change Partnership and Agency	
Overview Report				

Items to be scheduled				
Item	**Purpose**	**Lead Executive Member**	**Lead Officer**	**Comments**
Local Energy Area Plan	To receive a report that provides information on the Local Energy Area Plan. Local Area Energy Planning (LAEP) is a process which has the potential to inform, shape and enable key aspects of the transition to a net zero carbon energy system. Local Area Energy Planning was developed by Energy Systems Catapult.	Cllr Rawlins	David Houliston Mark Duncan	