

Draft Manchester Zero Carbon Framework 2020-2038

Appendix 4: Sector and Organisation Actions

MANCHESTER
CLIMATE CHANGE BOARD

MANCHESTER
CLIMATE CHANGE AGENCY



Appendix 4

Sector and Organisation Actions

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MCCB member updates

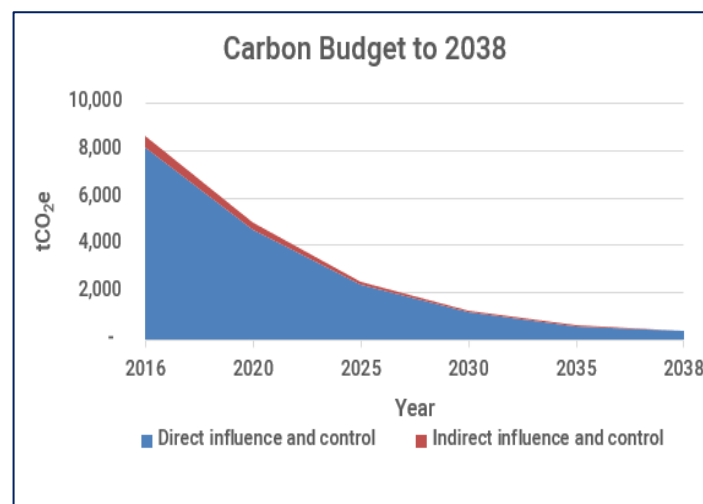
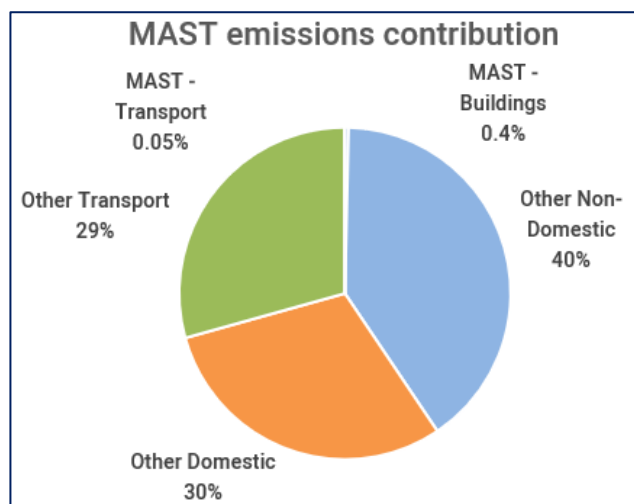
1. Manchester Arts Sustainability Team (MAST)



Profile:

- The Manchester Arts Sustainability Team (MAST) is a cross-sector network of cultural and arts organisations committed to working together to reduce their environmental impacts.
- MAST has over 30 members: 7 arts centres, 2 theatres, 3 museums, 3 galleries, 2 festivals, 2 broadcasters*, 1 music venue, 1 concert hall, 1 production company, 1 digital innovation company, 1 recycling company 1 university*, 1 college, 1 city council*.
- Key opportunity to influence member and attendee behaviours in addition to their own buildings/transport.

Carbon Budget to 2022		32,864 tCO ₂ e		Directly owned & controlled:		8,124 tCO ₂ e
Base Year:	2016	Total:	8,670 tCO ₂ e	Indirectly influenced:		547 tCO ₂ e



MCCB member updates

1. Manchester Arts Sustainability Team (MAST)



1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

- MAST will develop our Roadmap to Zero Carbon commencing 14th February 2019 – this project which is supported through Arts Council England will see us develop our strategy that sees us achieving our city's ambition in the next 20 years. We will explore the leadership, capacity, engagement, long term investment in zero carbon energy alternative technologies, immediate carbon cutting measures, divestment from all fossil fuels and parts of our economy that invests in it.
- MAST directly reports to its member organisations and also to the Cultural Leaders Group chaired by the city's Director of Culture.
- Many members report environmental performance to Arts Council England through Julie's Bicycle and their IG Tool. We intend to explore a new way in partnership with Anthesis to draw this together and be able to track our sector.
- Several members are participating in the Spotlight project which focuses on larger cultural organisations and their energy management and use.
- Many members are continuing with capital investment on their estate to low energy alternatives.
- Cultural Sector Carbon Literacy rollout project during 2019.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

- MAST is working with MCC and the EU's URBACT programme to deliver a 2 year project called C-Change which will see us share Manchester's good practice with five other cities across Europe. Through this project we will develop resource exploring the sector and its response to climate change that can be shared at a global level.
- Part of C-Change will see us work with a German city that is exploring how this model can be adapted to suit their city region and we intend to apply this learning to GMCA.
- Encourage GMCA policy and cultural funding adopts robust environmental criteria for all applications and reporting.
- Continue to develop our green procurement project with the Business Growth Hub.
- To work closely with Arts Council England to explore ways to improve environmental performance of its portfolio organisations and recipients of other funding streams.
- We are working with Julie's Bicycle to bring a reconfigured Creative Climate Leadership Programme for our city.
- We will grow our network and explore ways in which to build practical knowledge and better sharing of this within the network and beyond.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

Our action 2020+ will be defined through 2019. Building on 8 years of successful collaboration which has seen significant carbon cutting and public engagement, the next part of our journey starts on the 14th February when we map where we need to go and what still needs to happen. This will enable us to prioritise immediate and longer-term action.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

- Changes in funding policy to make high levels of environmental performance mandatory on a local and national level and respond to the need for much of the cultural sector to move entirely to renewable energy.
- We will seek ways in which to build more capacity into the network.
- We will openly share the knowledge developed through C-Change and the Accelerator project locally, nationally and internationally to our sector and beyond.
- We will improve our communications strategy.

MCCB member updates

1. Manchester Arts Sustainability Team (MAST)



HOME's vision is to be a best-practice arts and cultural venue, with environmental, social and economic sustainability at the heart of everything they do. Projects include being a Platinum Carbon Literate Organisation – having trained all staff, as well as being “HOME” to two bee hives.

MAST Case Study: HOME

The HOME site achieved BREEAM (Building Research Establishment Environmental Assessment) “Very Good” which is a significant achievement for a complex new building containing many spaces with multiple functions.

HOME's carbon footprint for energy consumption from 01 April 2016- 31 March 2017 was calculated at 348.3 tonnes CO₂e, a figure that we are committed to reducing.

HOME's aim is to be energy efficient. Their Building Management System (BMS) assists in the operating of the building, ensuring that it is continually controlled, monitored and adjusted. By remotely monitoring energy meters staff can record and consider our consumption.

Using real-time regulating of heating and ventilation systems can minimise waste and run efficiently and the Combined Heat and Power Plant (CHP) helps to reduce the carbon emissions through on-site energy generation and conversion.

<https://homemcr.org/about/policies/sustainability/our-building/>

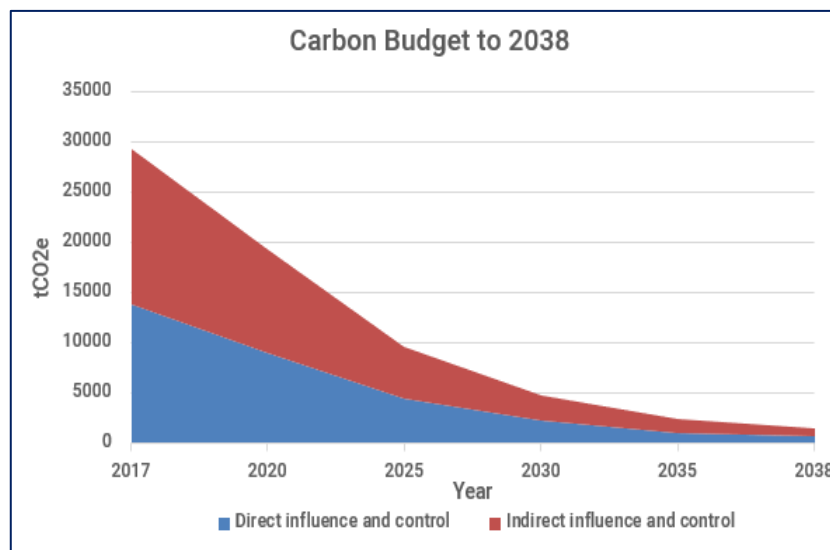
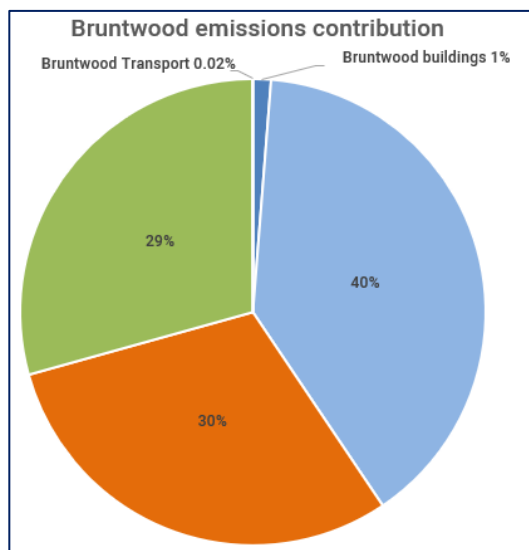
MCCB member updates

2. Bruntwood

Profile:

- Bruntwood own, let and manage buildings, workspace, and science facilities.
- They work with over 3000 businesses and own over 100 landmark properties (nationally).
- Bruntwood were the first UK commercial property company to sign the Advancing Net Zero commitment.
- Two parts of the business relevant to Manchester:
 1. Sci-Tech (property portfolio dedicated to driving the growth of the science and technology sector).
 2. Works (office space leasing to other businesses).

Carbon Budget to 2022		98,532 tCO ₂ e		Directly owned & controlled:	13,805 tCO ₂ e
Base Year:	2017	Total:	29,354 tCO ₂ e	Indirectly influenced:	15,549 tCO ₂ e



2. Bruntwood

1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

- In line with our commitment to achieving net zero by 2030, we have an immediate target of achieving a 10% reduction in our carbon intensity (kgCO₂e/m²) compared to our 2017/18 baseline.
- We are also introducing science based targets across the business for scope 1 & 2 emissions in April 2019 and we'll start to look at our Scope 3 emissions from June 19 onwards.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

- By publicising our own zero carbon ambitions we hope to encourage others to do the same, and we'll look to reinforce this with a series of blogs, newsletters and drop in sessions for our colleagues, customers and communities over the year.
- We are also introducing a number of carbon focused initiatives within our product offering and these will start to come on stream as the year progresses.
- Encouraging public disclosure will be key to unlocking the potential for other businesses to both commit and to act, so highlighting how organisations can get involved will be a core theme.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

- We've been working with UKGBC on our action plan for net zero and that work is nearly complete, but understanding our scope 3 emissions will be a complex and significant piece of work which is likely to last beyond 2020.
- We've engaged the Carbon Trust to work with us on all areas of the SBTi but haven't finalised timeframes for the completion of scope 3 as yet.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

- Our biggest request in terms of policy and legislation (at all levels) is that it is consistent and joined up, as the most damaging outcomes from the current fragmented and constantly changing landscape are distrust and disengagement. Given the likely levels of investment required, we need a clear operating framework which gives us a stable platform to move forward at pace.
- Sharing progress and learning will be essential to maintaining momentum and we are committed to public disclosure of progress against our emissions targets as part of our annual report from April 19 onwards. As outlined above, our action plan includes a communications strategy for sharing knowledge and insight at different levels and this will encompass all areas of our business (including our upstream/downstream supply chain) as work on our scope 3 emissions takes shape.

MCCB member updates

2. Bruntwood



The science and technology sector remains key to Bruntwood's aspirations for driving economic growth in the UK regions.

"We think businesses based on R&D, innovation or high value intellectual property are where the UK truly excels. That's what it says in the UK government's Industrial Strategy and that's an outlook we share." Chris Oglesby, Bruntwood Chief Executive.

Case studies: Bruntwood Bright Building, Manchester

Bright Building was developed for Manchester Science Park (MSP), the UK's leading science and technology park, offering flexible office space.

Developed by majority shareholder, Bruntwood, the 70,000 sq ft Bright Building is the flagship building, and acts as the central hub for the entire 150-strong community of science and technology businesses within MSP.

MSP has recently achieved ISO 50001 in recognition of its energy management process. This saw it realise a 6% reduction in carbon emissions from 16/17 to 17/18 which a significant achievement in an already very efficient building.

The site features a £400,000 Tesla Powerpack system in a bid to move off grid.



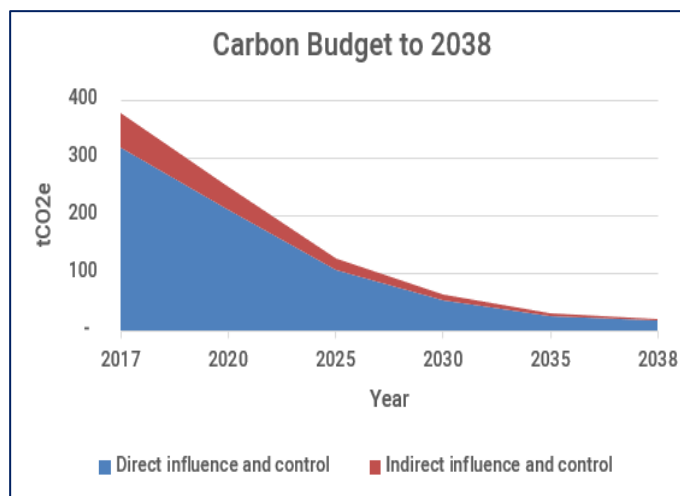
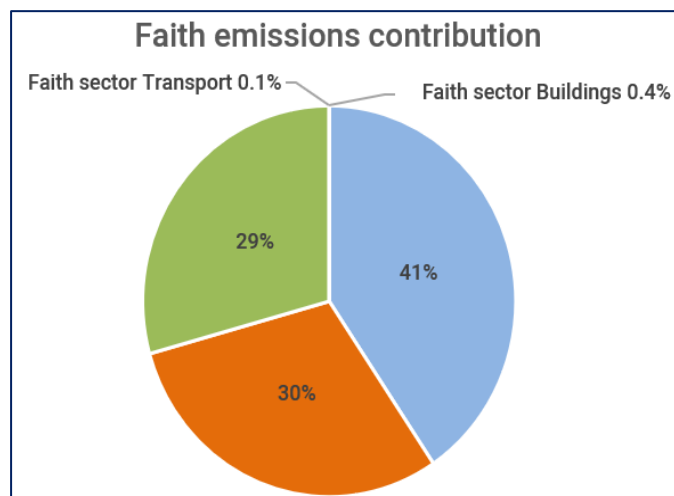
MCCB member updates

3. Faith Network – Our Faith, Our Planet

Profile:

- There are three key groups that are relevant to engage with regards to the Faith sector:
 1. Greater Manchester Faith Community Leaders group.
 2. The Faith Network 4 Manchester (interfaith focus).
 3. The 'Our Faith Our Planet' group (climate change activist focus).
- The Our Faith, Our Planet group is made up of 10 faiths including Christian (Anglican, Catholic & Methodist), Buddhist, Hindu, Sikh, Jewish, Jain, Bahá'í and Sufi Muslim.
- Members & attendee transport emissions and behaviours (Scope 3), Buildings (Scope 1 & 2).

Carbon Budget to 2022	1,284 tCO ₂ e	Directly owned & controlled:	317 tCO ₂ e
Base Year:	2017	Total:	383 tCO ₂ e
		Indirectly influenced:	65 tCO ₂ e



MCCB member updates

3. Faith Network – Our Faith, Our Planet



1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

The OFOP Group will:

- Gather together an Environmental Working Group within each Faith to act as liaison and lead on environmental and energy issues.
- Work together to baseline energy data for the buildings that incorporate the Our Faith, Our Planet Group.
- Seek capacity (resources and funding if required) to carry out energy audits of the buildings that are using the most energy.
- Follow the guidelines within "ChurchCare" for audits and simple steps to reduce energy (<http://www.churchcare.co.uk/shrinking-the-footprint/ways-to-take-action/energy-efficiency/audit>).
- Develop a step by step approach for buildings based upon the findings of the audits (using ChurchCare or other guidance (<http://www.churchcare.co.uk/shrinking-the-footprint/ways-to-take-action/energy-efficiency>)).
- Speak / visit other Faith organisations / community buildings who have been through a similar process to learn what could work.
- Seek support to develop a Business Case for retrofitting the buildings based upon the step approach of dealing with Lighting, Heating and Renewable Energy Technologies (e.g. switching to green energy, replacing energy inefficient lighting, lagging pipework, upgrading controls, seeking insulation, upgrading boilers, installing renewable energy technologies such as Solar PV or Ground Source Heat Pumps as appropriate).

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

The OFOP Group will:

- Ask attendees/members of the Faith Community at the buildings (such as parishioners, devotees, building users etc.) to join the Environmental Working Group so they can help.
- Provide information and talk about what we want to do, and how we are making a difference to all building users.
- Talk to the Carbon Literacy Project about how to offer Carbon Literacy to all faith networks.
- Talk to other local groups about what we want to do and how they may help (e.g. MESS <http://marplemess.org.uk/>).
- Highlight what Faiths are doing at the Faith Leaders Group.
- Continue to hold an Annual OFOP Conferences to highlight the need for continued action on climate change.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

The OFOP Group has met a number of times and agreed a way forward. Time is now required to write a more detailed Monthly action plan for 2019/20.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

The OFOP Group needs advice on resources, including where to look for funding and resources to keep the momentum going forward.

MCCB member updates

3. Faith Network – Our Faith, Our Planet



The Very Reverend Rogers Govender, Dean of Manchester said:

“Levels of heat are very important for both visitors and worshippers alike. The recent extremely cold winters have embarrassed the Cathedral as temperatures were unacceptably low. We’re incredibly pleased that we can carry out this work in a sustainable and responsible way, ensuring the Cathedral is fit for future.”

OFOP Case study: Manchester Cathedral

Built in 1215, Manchester Cathedral dates from medieval times. Its last major refurbishment was in the 1950-60s, following bomb damage in the Second World War. The old under-floor heating system dated from the post war rebuilding era of the 1950s. In the last 5 years there have been three incidents of the heating flooding the Cathedral floor, as a result the heating output was around 60% of the levels they should be.

The Cathedral has now made a commitment to become the UK’s ‘Greenest’ cathedral, and has undertaken number of measures to ensure this commitment is met including:

- In 2013 the Cathedral replaced the underfloor heating with ground source heat pumps that use natural energy stored in the earth to heat and cool the Cathedral.
- The building now gets 70-75% of its heating from 32 geo-thermal wells.
- In March 2015 over 4,151 bulbs (100-150 watt) were replaced with low energy 14 watt LEDs.

MCCB member updates

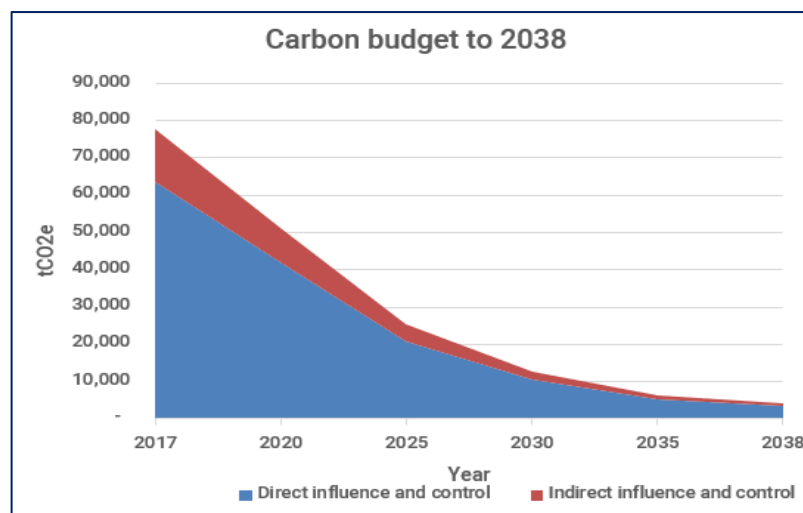
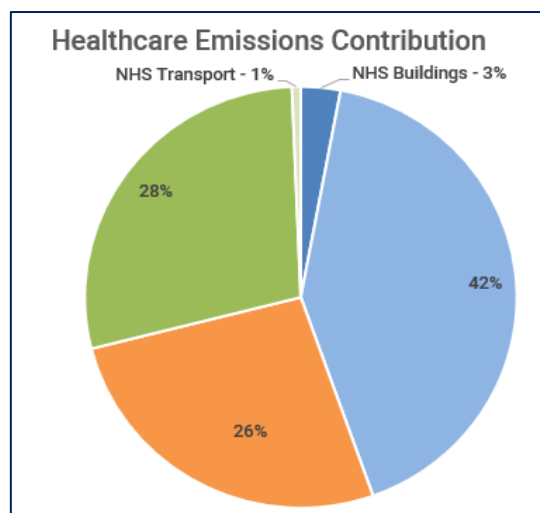
4. Manchester University NHS Foundation Trust



Profile:

- There are numerous healthcare facilities across the city, in addition to NHS owned and control fleet and transport emissions associated with patients / visitors and supply chains.
- In Manchester there are 7 main hospitals plus GP and walk in clinics.
- The central Sustainability Development Unit (SDU) manage and report NHS emission data.
- Current low-carbon investment strategy is looking at CHP, LED lighting, BMS optimisation and waste.
- The NHS's footprint is directly impacted by other city sectors such as transport (air quality) and housing (social care/fuel poverty).

Carbon Budget to 2022	324,478 tCO ₂ e	Directly owned & controlled:	63,748 tCO ₂ e
Base Year:	2015	Total:	77,857 tCO ₂ e
		Indirectly influenced:	14,109 tCO ₂ e



MCCB member updates



4. Manchester University NHS Foundation Trust

1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

MFT has a commitment in our Sustainable Development Management Plan to reduce our emissions by 15% by 2023 benchmarked against internal floor space and patient contact. This equates to a year on year reduction of 3% across all of our scopes. Over the next year we are planning significant projects that include: major LED lighting upgrades across all our hospitals, the construction of a new CHP (Combined Heat and Power), a new Building Management System, the installation of Solar PV panels, and the implementation of a new mass engagement programme that seeks to improve staff behaviours when it comes to energy use. We also aim to deliver a sustainable anaesthesia programme, to raise awareness of the gases used and work with staff to reduce the impact by switching to lower carbon alternatives.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

We will work closely with our FM provider Sodexo on joint initiatives to address carbon reduction. We have also developed relationships across the health and care sector to raise awareness and share best practice. We already have a well-established programme of staff engagement on sustainability which could easily be rolled out across the healthcare sector in Manchester. As an NHS Trust we are bound by very particular procurement standards and processes which mandate who we work with and who we use as our suppliers. However we work closely with the procurement team to ensure that sustainability practices are embedded within the tender processes.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

MFT has a Sustainable Development Management Plan which covers five years, running from 2018 – 2023. However this SDMP only ensures MFT reaches an 80% reduction by 2040 by following the 3% reduction year on year across all scopes. As such, there is a significant amount of work to be done to reach the zero carbon by 2038 goal set by GM Mayor. Due to the ever-changing nature of the NHS, its budgets and the size and intensity of our estate, long term planning is challenging. Support with determining how we will reach this carbon reduction target in the context of the anticipated changes will be required to inform our plans.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

Although we working hard to reduce our direct emissions, it would be an easier task if this was mandated through local or UK policy to make efficiencies. Policy changes that would be beneficial include:

- Improvement to transport infrastructure including electric (ULEV) transport across the region
- Mandated zero carbon new developments
- Locally generated renewable energy

MFT plays an active role both within Manchester and as part of the national health and social care sector which we use as a platform to share our learnings and make sure that our Trust is on target. As for the Health and Social Care sector, MFT is one of the largest Trusts, and we play an active role in Sustainability, Waste and Travel National Performance Advisory Groups, frequent and productive collaborations with various sector bodies, and we regularly attend and present at national conferences and events.

MCCB member updates

4. Manchester University NHS Foundation Trust



The Hospital Trust is part of the “Green Impact” programme – a sustainability accreditation scheme with an awards element designed for departments and teams of staff across the Trust.



Case Study: Manchester University NHS Foundation Trust

Manchester University NHS Foundation Trust which includes 5 hospital sites within Manchester, has a Sustainable Development and Management Plan for 2014-2020 outlines how the Trust is investing substantial resources into carbon saving initiatives and has a 15% reduction by 2023 for its direct carbon emissions.

The Trust’s site in Wythenshawe was the first NHS hospital to install biomass boilers with a capacity to reduce carbon emissions by 3,400 tonnes each year is one of the reasons why UHSM has staked a claim to the title ‘Britain’s Greenest Hospital’

Manchester Foundation Trust has won several awards in the NHS Sustainability Awards 2017 including Overall Winner in 2017.

www.mft.nhs.uk

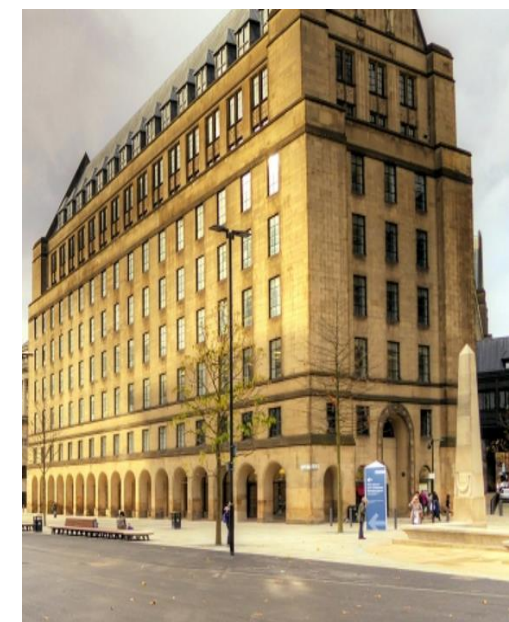
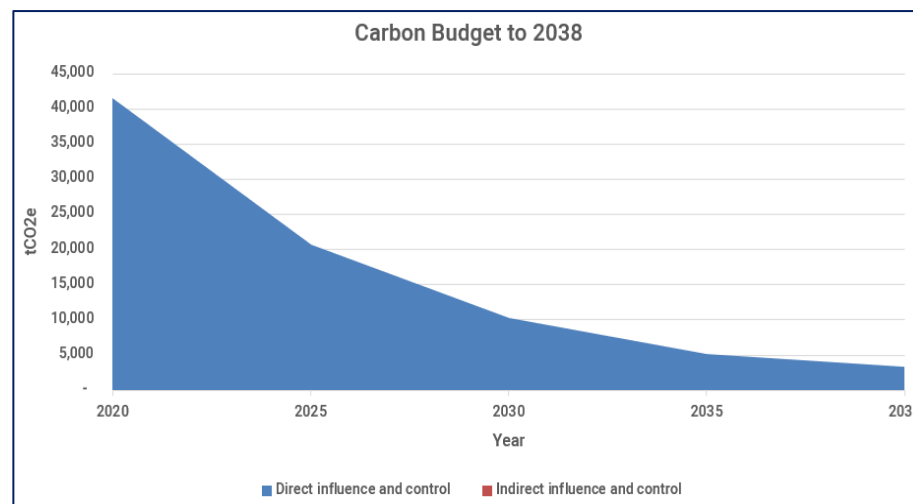
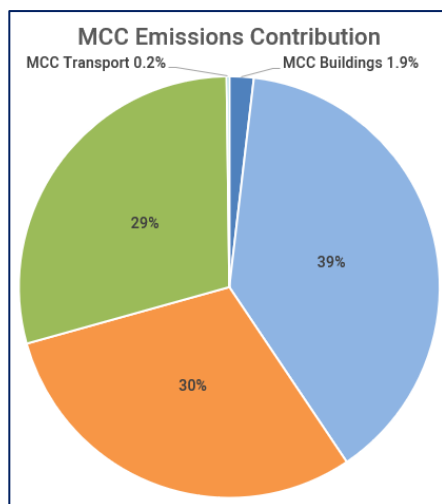
MCCB member updates

5. Manchester City Council (MCC)

Profile:

- Manchester City Council ("MCC") have a range of direct emission sources including:
 - MCC Buildings.
 - Traffic Signalling.
 - Streetlights.
 - Transport (MCC Fleet, MCC Grey Fleet, MCC Taxis, MCC Train, MCC Air Travel, MCC Car Club, Waste Collection Fleet).
- Emissions outside of direct influence have included other public sector organisations (excluding the NHS) that are referenced via the City Council website, such as leisure centres, police and fire services (both buildings and transport).

Carbon Budget to 2022	160,150 tCO ₂ e	Directly owned & controlled:	47,688 tCO ₂ e
Base Year:	2017/18	Total:	47,688 tCO ₂ e
		Indirectly influenced:	TBD tCO ₂ e



MCCB member updates

5. Manchester City Council (MCC)



1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

Between April 2019 and March 2020 we will:

- Continue to deliver the actions contained within the Climate Change Action Plan (CCAP) 2016-20 and work to achieve a 41% reduction in CO₂ from the 2009/10 baseline. In particular the estates transformation and rationalisation programme, the street lighting LED replacement programme and the civic quarter heat network.
- Publish our Annual Carbon Emissions Report in July 2019 to determine our progress against our 2020 target.
- Work with the Manchester Climate Change Agency to consider the best methods to engage Manchester's residents in this agenda.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

- Continue to work with and support the Manchester Climate Change Board and Agency to develop a carbon reduction plan for the whole city.
- Support the development of the GMSF which sets an ambition for all new buildings to be Zero Carbon by 2028.
- Start the refresh of the Manchester Local Plan during 2019 which will set out the development framework for the city including: density, zero carbon ambitions, pattern of land use and employment, greening and greenspace, planning and adaption.
- Further develop the social value offer within procurement/commissioning to encourage positive action in relation to zero carbon within the Council's supply chain.
- Work with TfGM to develop a transport network that encourages sustainable mobility, charging infrastructure.
- Work with housing providers on the Council's affordable housing development programme.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

In order to develop our plan from 2020 we will:

- Undertake a detailed analysis of our building stock to gain a more detailed understanding of the opportunities for energy generation, energy efficiency and any barriers to reducing emissions.
- Review all of the council activities currently included in our CCAP to determine potential opportunities and barriers to change.
- Explore funding opportunities to support our zero carbon ambitions.
- Appoint a senior officers group to develop and drive the delivery of our next 5 year CCAP.
- Develop a detailed 5 year CCAP from 2020-2025.
- Ensure that our carbon reduction ambitions are embedded throughout organisational activities and strategies such as the Local Plan and the Local Industrial Strategy.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

- Work with partners across the city such as TfGM and the GMCA to bring forward projects that will reduce carbon emissions.
- Build the technical expertise within the Council to deliver programmes.
- Seek innovative funding models and explore national and international opportunities for investment and collaboration.
- Lobby government to Accelerate the decarbonisation of the national grid and provide financial support and incentives for the deployment of green technologies to reduce emissions e.g. solar PV, domestic and commercial retrofit, electric vehicles and charging infrastructure.

MCCB member updates

5. Manchester City Council (MCC)



Pupils at the school played an active role in cutting the school's carbon emissions, and the initiative is used as a key teaching aid within science, and even developing business skills across the sixth form students.

The schools pupils also made an award winning video as part of #ClimateChangeDay:

https://www.youtube.com/watch?v=4rr_nf0bUZw&feature=youtu.be&fbclid=IwAR2erqPj3auvwiYYuo1EPnKPI0saeJbtfsRp25xU2edx-fw86z_k54U8TDQ

Case Study: Parrs Wood High School PV array

Parrs Wood in Didsbury hosts one of the country's largest on-roof solar Photo-Voltaic arrays on a school. The 250KW single installation array is mounted across the school's main roof with the system totalling of 961 solar panels (260W panels) combined with four high efficiency inverters.

The solar installation has significantly reduce the school's annual electricity consumption, as well as slashing its carbon consumption by 119 tonnes per year. Based on generated power, that is enough for over 4million hours' worth of TV per year.

As part of the Solar Schools initiatives, they also installed an electric car charging point for the school, which is powered by the PV system.

The system was funded through Manchester City Council and the Solar Schools Initiative.

MCCB member updates

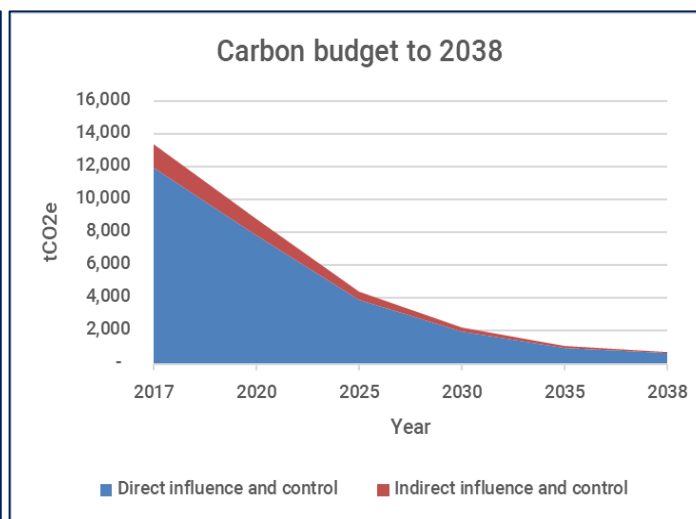
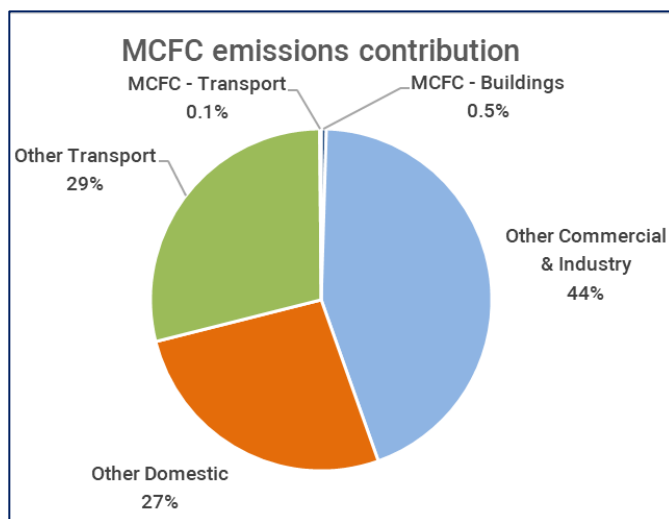
6. Manchester City Football Club (MCFC)



Profile:

- Over 30 football* & concert events held by Manchester City Football Club over the year.
- Each event by c.50,000 people per event.
- Estate comprises of the main Etihad stadium plus a number of offices and training buildings and facilities.

Carbon Budget to 2022		45,889 tCO ₂ e	Directly owned & controlled:	11,913 tCO ₂ e
Base Year:	2016/17	Total: 13,387 tCO ₂ e	Indirectly influenced:	1,474 tCO ₂ e



* All competitions

MCCB member updates



6. Manchester City Football Club (MCFC)

1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

Identify and review our CO₂ footprint history and future and set targets for continuing reduction by the Club, its partners and stakeholders.

The Club has achieved an average year-on-year reduction by 7% since 2004 and will build on this in the coming year to further reduce the footprint through energy-efficiency, waste and packaging reductions, changes to transport options and management. We shall also consider the CO₂ impact of capital programme, construction and maintenance to realise reductions of 7-10%

Recognise and apply scopes 1,2,3 as appropriate.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

Through our contracts and estate partnerships, work actively with all parties to seek joint approaches to parallel reductions, either through contractual means or by way of positive engagement.

We are seeking options around energy, waste and transport in particular. As above. We shall also consider the CO₂ impact of capital programme, construction and maintenance to realise reductions of 7-10%.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

We have completed a draft action plan and established direction and a series of action groups based upon three strands – People; Environment; Culture which will form critical organisational policy and build on our values. Our action plan also embraces the opportunity to widen the programme across the whole Etihad Campus, subject to adoption and will actively inform the Group's actions globally.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

The greatest challenge is (mass) transport and positive options – this impacts on fans mostly of which there are annual circa 1.7m journeys (each way) to the Etihad Stadium. Walking and cycling improvements and incentives, accessible and affordable public transport and positive, constructive health promotion benefits to the individual. Have already begun some discussions with TfGM and MIHP but this would benefit from a wider discussion. We can share learnings with all Campus, and evolving partner, stakeholders and with other 'campus projects' in and around the city.

MCCB member updates

6. Manchester City Football Club (MCFC)



The development of City Football Academy and the Etihad Stadium (and Campus) are significant projects and the Club recognises that whilst there has been good, credible progress with sustainability, there remains a great deal to do, with the opportunity to work closer to the wider city and city-region ambitions for a zero carbon economy.

Case Study: Manchester City Football Club (MCFC)

MCFC has sought to respond and to work proactively in its sustainability and corporate responsibility (CR) agenda since 2004 and has made significant advances in developmental and operational efficiency, through product innovation and with responsible and sustainable local engagement.

Each year, since 2004, the Club has produced a detailed CR report which includes information about all its actions (travel, energy, water, waste, operations) to measure its CO2 footprint in order to work for continuous improvement and reduced impact.

Alongside these primary impacts, MCFC has been proactive in identifying efficiencies in energy, water and operations; in its capital development programme and in the scope of opportunity to engage local people and organisations in procurement, work, skills and learning.

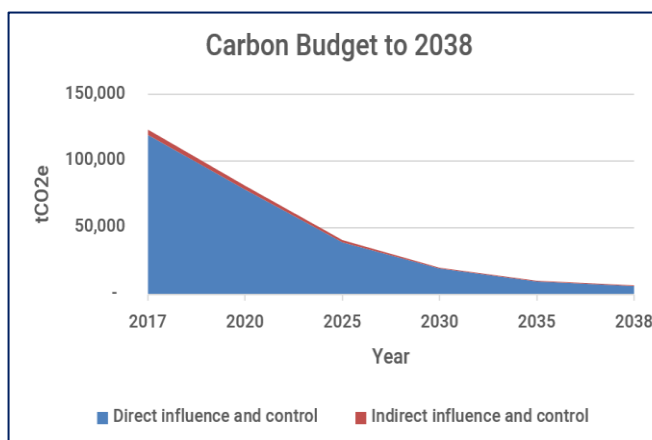
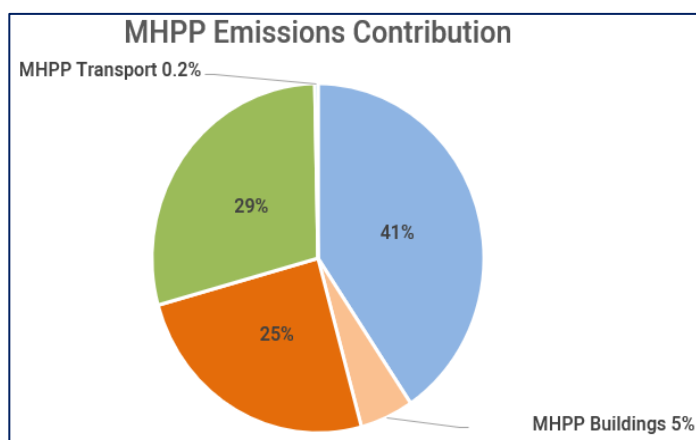
MCCB member updates

7. Manchester Housing Providers Partnership (MHPP)

Profile:

- The Manchester Housing Providers Partnership (MHPP) brings together the registered housing providers and the City Council.
- There are 18 registered housing providers that are all members with stock holdings across Manchester.

Carbon Budget to 2022	529,563 tCO ₂ e	Directly owned & controlled:	119,910 tCO ₂ e
Base Year:	2015	Total:	127,019 tCO ₂ e
		Indirectly influenced:	7,109 tCO ₂ e



MCCB member updates

7. Manchester Housing Providers Partnership (MHPP)

1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

- Perform measurement activities e.g. stock condition surveys/emissions baseline, asset replacement/maintenance status, extent of carbon literacy status, explore/renew IT systems to enable greater insight & inform decisions, conduct bill monitoring exercises.
- Implement better governance mechanisms e.g. internal policy setting, review existing policy, develop new build standard, establish working group/team/ambassador, better utilise IT systems, develop clear or specific approaches/plans for asset groups/estates.
- Engage/Educate e.g. Carbon Literacy delivery, awareness raising communication, join external carbon groups, review prior projects success/challenges, hold staff events.
- Improve & establish investment plans – get sign-off on existing plans, review funds, perform capital spend review, understand funding for high rise flats, fund efficiency projects.
- Continue delivery e.g. pilot projects, waste reduction, staff travel incentives, fleet replacement/EV easing, building new builds to exceed regs, PV/storage roll out, efficiency improvement in stock & offices, green space development.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

- Align with other programmes e.g. Digitalisation, GM targets.
- Work with consultants/specialists e.g. stock condition surveys, Energy advisor to work with tenants.
- Work with other MHPP organisations e.g. share best practice, supply chain carbon literacy promotion, develop other programmes to influence supply chain.
- Influence staff travel to work.
- Tenants behaviour change & education.
- Campaigns on waste reduction & recycling increase, energy efficiency, green transport.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

- Diverse mix of plan status across the MHPP group – more mature have identified specific assets/technologies, number of properties & when, less mature need to perform further research exercises and build organisation capacity, understanding and engagement before plans can be made.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

- Knowledge sharing with MHPPs e.g. plan critique, carbon literacy promotion in procurement, opportunities & technologies, procurement opportunities, share with other forums e.g. Low Carbon Asset Management Hub, Green/Blue Strategy Groups.
- Funding e.g. Develop relationships with funding intermediaries, understand contribution from Council (if any), understand access to grants, capital support via Homes England, availability of discounted loans/mortgages for green technologies.
- Training – Carbon Literacy.
- National Government incentive certainty e.g. RHI.
- GMCA - low carbon policy development and knowledge sharing with RPs outside of the city of Manchester.
- Better MHPP accountability e.g. collective measurement & reporting progress/benchmarking, promote standard KPIs, define consequences for laggards.
- Provide better clarity of definition for zero carbon.
- Applying MHPP purchase power to reduce costs for RPs.
- Enhanced valuation mechanisms – low carbon should increase stock value but doesn't currently.

MCCB member updates

7. Manchester Housing Providers Partnership (MHPP)



The University of Manchester completed a study on the development and produced an informative guide titled [“Maximising the Benefits of PassivHaus: A guide to supporting older occupants”](#)

“We already know that levels of fuel consumption and noise transmission have greatly reduced. Feedback from customers indicates that the feeling of pride in the home has significantly increased. All of these factors will drive improved levels of mental wellbeing and tenancy sustainability, to add to the social return on investment already achieved as a result of the project.”
Dave Williams, One Manchester.

MHPP Case Study: Erneley Close Retrofit

One Manchester commissioned R-GEN to reinvent two dilapidated concrete frame maisonette blocks in Longsight into low energy modern accommodation for older people, which would also be a catalyst for wider social and physical regeneration in East Manchester.

The refurbishment used ‘EnerPHit Certification Criteria’, which is a residential refurbishment criteria used for Passivhaus renovations and means the requirement for space heating and cooling is dramatically reduced.

The first three months of heating bills showed an average reduction of 90%, which given that the majority of residents are elderly and therefore tend to be at home more, is excellent.

The scheme was a finalist in the UK PassivHaus Awards 2015.

MCCB member updates

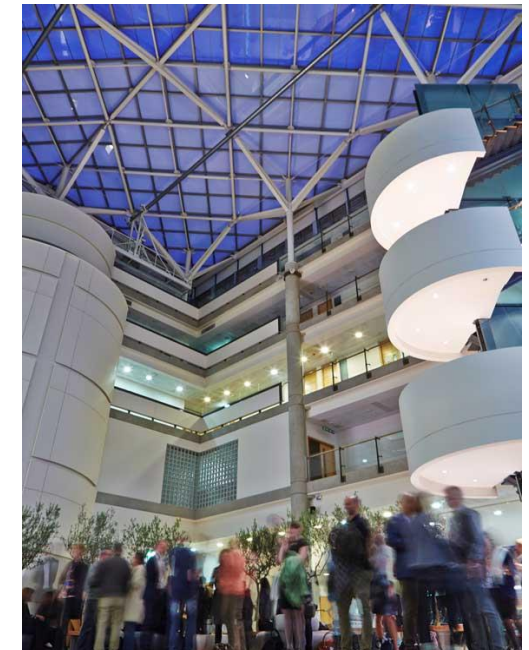
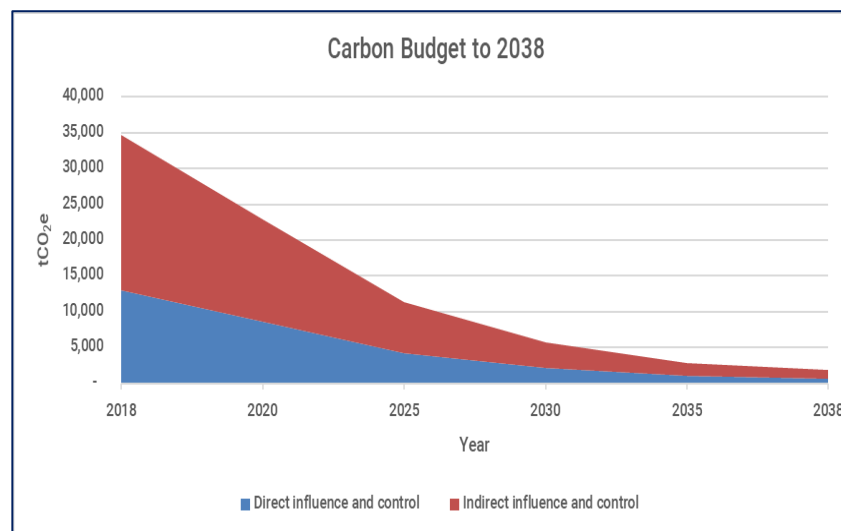
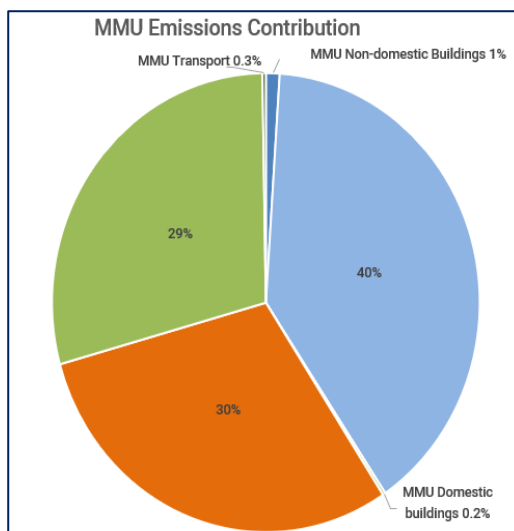
8. Manchester Metropolitan University (MMU)



Profile

- Manchester Metropolitan University is the sixth-largest university in the United Kingdom by enrollment (33,010 total students).
- Manchester Metropolitan University is the UK's greenest university according to the People and Planet League 2017.

Carbon Budget to 2022		101,386 tCO ₂ e		Directly owned & controlled:		12,957 tCO ₂ e
Base Year:	2017/18	Total:	34,701 tCO ₂ e	Indirectly influenced:		21,774 tCO ₂ e



MCCB member updates

8. Manchester Metropolitan University (MMU)



1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

Continue to work towards our 2020 objectives and targets in our Environmental Sustainability Strategy
Develop a pipeline of energy efficiency projects for the next five years, following the completion of recent energy surveys.
Deliver energy and carbon reduction projects using the University's Revolving Green Fund.
Finalise the Infrastructure Masterplan, including a future energy strategy to help inform actions to progress towards the 2038 target.
Develop a new staff and student travel plan.
Develop a new Waste Strategy.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

Deliver Carbon Literacy programme to ~1000 students, using the Environmental Education Fund which is calculated through a self-tax on international student travel.
Achieve Level 4 in the Flexible Framework to improve our sustainable procurement practices.
Continue to deliver the staff and student sustainable travel projects.
Deliver a range of sustainable engagement programmes for staff and students, including site energy tours.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

The University has an Environmental Sustainability Strategy in place which sets out a range of 2020/21 targets. We are currently at a 41.6% reduction in CO₂e emissions compared to our baseline year (05/06) and are on track to achieve our 50% reduction target set out in the strategy.
Over the next 12 months, the University will develop a new 2030 Sustainability Strategy, which will include a new set of objectives and targets.
Secure support and funding to deliver the low/zero carbon options presented in the Infrastructure Masterplan and to develop a new Carbon/ Energy Strategy.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

Planning Policy- agree a timescale on zero carbon targets for both new and existing buildings. Ensure the most up to date carbon emissions factors are used in the planning approval process (Part L).
Establish a zero carbon working group with other UK Universities, to knowledge share and coordinate Zero Carbon plans.
Prepare an annual sustainability report to share progress.
Share best practice with Oxford Road Corridor Partners and Low Carbon Hub Groups in the City.

MCCB member updates

8. Manchester Metropolitan University (MMU)



Case Study: Sustainable Campus MMU

By integrating environmental sustainability into every aspect of design, Birley is playing a major part in achieving Manchester Met's ambition of 'Zero Carbon, Zero Waste, Zero Waste' and Maximum Biodiversity.

The site hosts:

- The Robert Angus Smith Energy Centre uses combined Heat and Power (CHP), water storage and boiler systems to provide heating and hot water to campus.
- Boreholes supply fresh water and supply heating and cooling to the campus.
- Rainwater harvesting and collection systems reduce mains water consumption and the risk of flooding.
- Maximum use of natural daylight and extensive use of LED lighting.
- 18 electric vehicle charging points are available for public use.

<https://www2.mmu.ac.uk/birley/sustainability/>

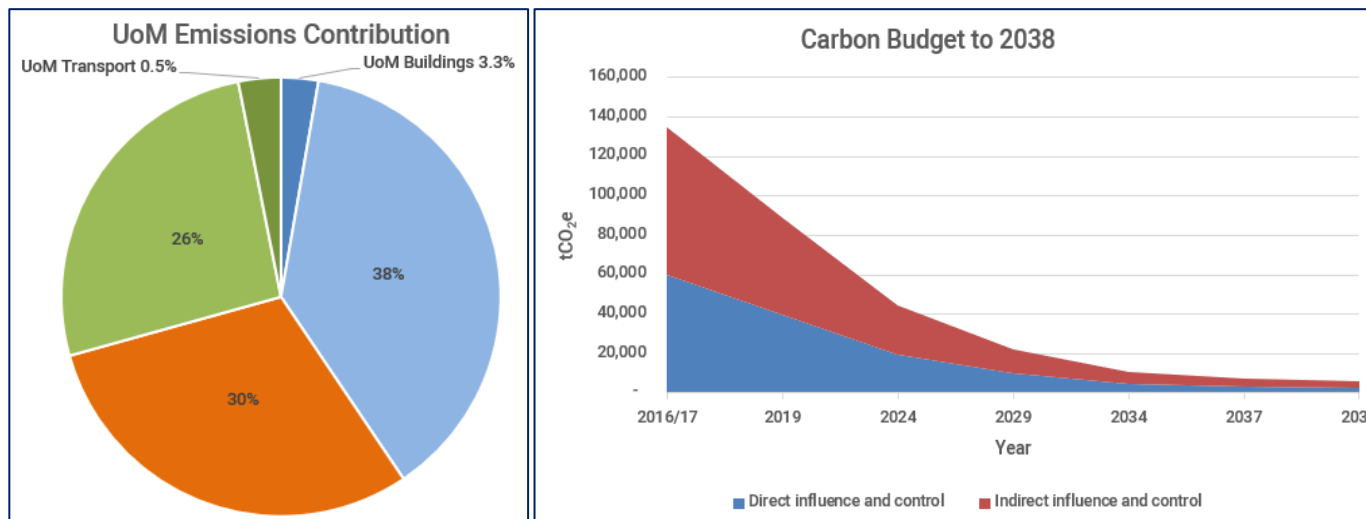
MCCB member updates

9. University of Manchester (UoM)

Profile

- University of Manchester is the second-largest university in the United Kingdom by enrollment (40,490 total students).
- The University of Manchester is the largest single-site university in the UK.

Carbon Budget to 2022		453,398 tCO ₂ e		Directly owned & controlled:	63,125 tCO ₂ e
Base Year:	2016/17	Total:	tCO ₂ e	Indirectly influenced:	74,895 tCO ₂ e



MCCB member updates

9. University of Manchester (UoM)

1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

- Deliver agreed Revolving Green Fund (RGF) energy efficiency/carbon reduction projects.
- Develop action plans to progress Energy Conservation Measures (ECMs) and carbon reduction projects.
- Work with our 400+ registered Sustainability Champions, Energy Champions, Lab Sustainability groups and 80+ Green Impact Teams to support behavioural change initiatives targeted to improve environmental performance. Work with our designated Environmental Sustainability Advisors to support delivery of environmental sustainability targets across design, construction and post-occupancy.
- Develop actions to support University target to reduce business air travel by 12% from 2014/15 baseline (83million km). Deliver infrastructure and initiatives to support an active travel programme, including installing an additional 100 cycle spaces. Plant semi-mature trees on campus. Commit to reducing single use plastics and building action plans to support this.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

- Launch improved software for our staff sustainability engagement programme, 10,000 Actions, alongside a comprehensive communications plan.
- Deliver Sustainability Challenge to first year undergraduates.
- Provide a programme of resilience and influencing training to our Sustainability Champions, Living Campus Champions and Energy Champions. Work with our Champions to run energy engagement programmes and monitoring the effectiveness of this through research which will inform future engagement programmes.
- Work with our Communications and Marketing Team to improve the impact of environmental sustainability messaging, both internally and externally.
- Setting on site consumption targets for Contractors to reduce on site electricity, gas, water, red diesel and waste.
- Supplier engagement tool for our supply chains to reduce emissions from procurement.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

- Developed 1,300 ECMs through series of energy audits across 110 University buildings, estimated to save 41% carbon savings with a 10 year payback. Also recognised investment needed and potential projects to support a three-year behavioural change programme estimated to deliver annual carbon savings of 1,140tCO₂. Resource is needed to deliver the projects identified.
- A carbon calculator has been developed to monitor carbon, interventions and scenarios.

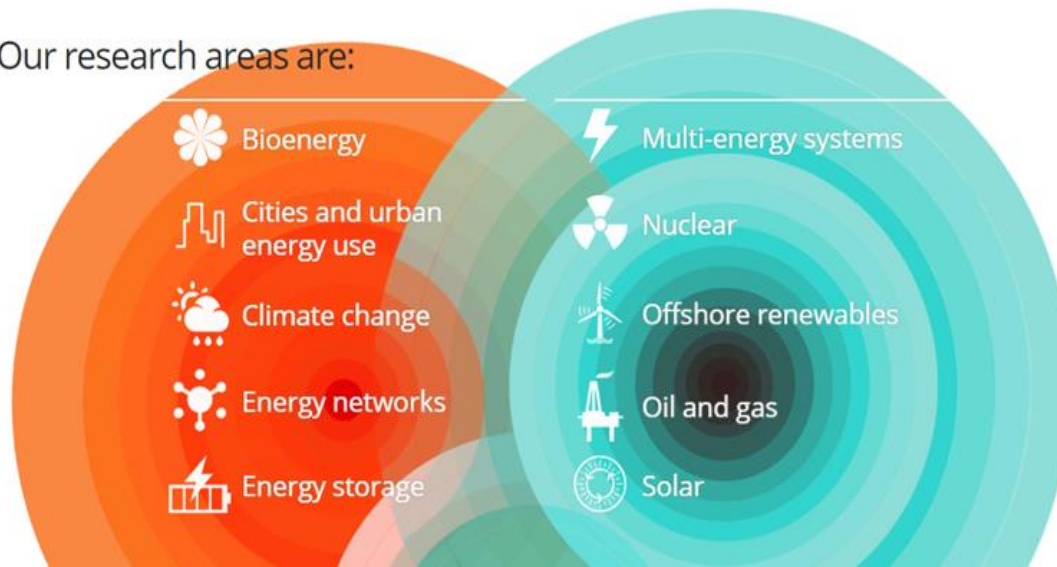
4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

- Funding to deliver the ECMs and proposed behavioural change initiatives.
- Planning/Policies: wider national, GM, MCC and internal policy and incentives to support transition/journey to zero carbon. Feed in tariffs for renewable technologies.
- Waste: support from MCC with our residential recycling collections and associated data, single use cup tax enforcement within Manchester, mandating food waste collections for businesses.
- Sharing progress and learning: Manchester Climate Change Board member, continue to work together on corridor sustainable transport group; agreed to meet with corridor colleagues to share learning in relation to carbon and 2038 commitment; publish carbon management plan when complete; publishing new SR report 2019; build on Jan 2019 Sustainability Research Workshop and continue meetings between researchers/academics and MCC/GMCA; hosting EAUC conference 2019; and, invitation to explore options for wider engagement through the 10,000 Actions engagement platform.

MCCB member updates

9. University of Manchester (UoM)

Our research areas are:



Case Study: Manchester Energy at The University of Manchester

The University of Manchester is pioneering the energy systems of the future so that we can continue to heat our homes, light our buildings and travel. Manchester Energy brings together over 600 researchers from across the University, and supports research and education across the energy spectrum.

www.energy.manchester.ac.uk

Climate change research at the University of Manchester falls under the remit of Tyndall Manchester. Tyndall Manchester undertakes world class research delivering agenda-setting insights on energy and climate change.

Professor James Thompson, Vice-President for Social Responsibility, said:

“We know that these are challenging targets, but along with our partners we are determined to fully contribute to a vitally important local project which has global repercussions.”

MCCB member updates

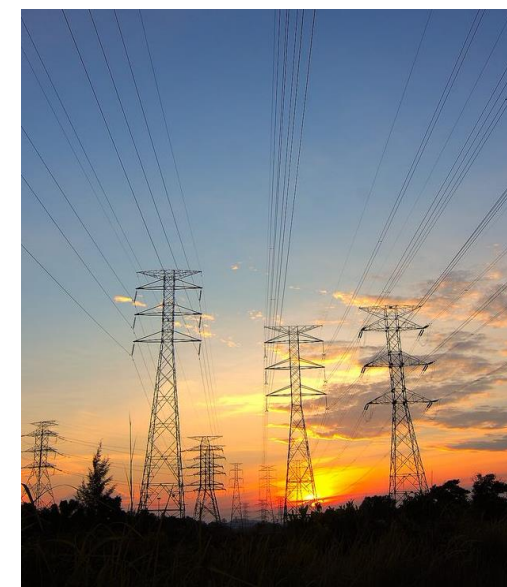
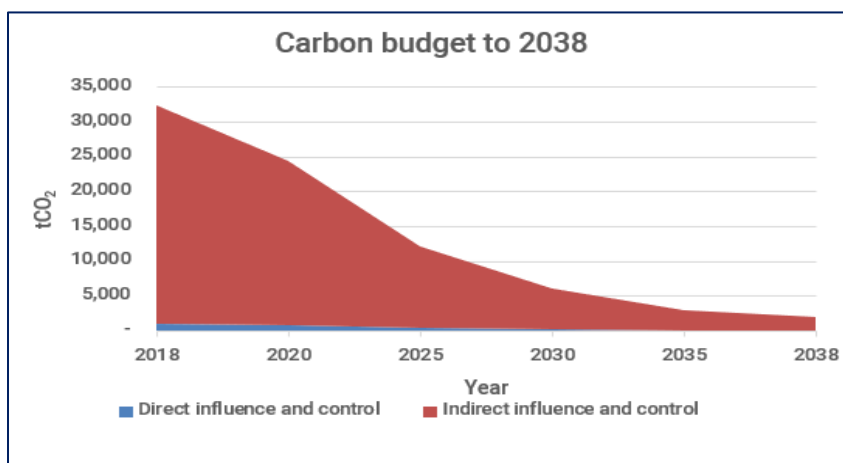
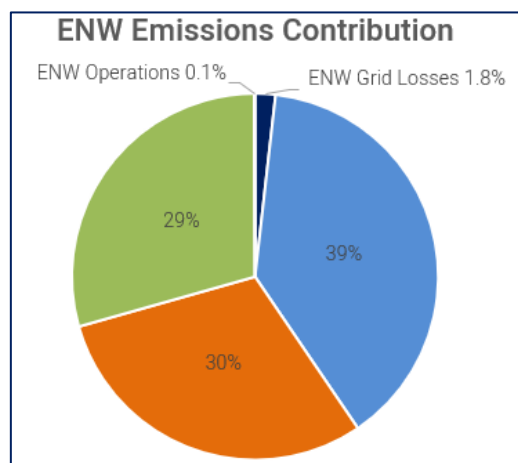
10. Electricity North West (ENW)



Profile

- Electricity North West is the electricity distribution network operator ('DNO'), responsible for the administration and maintenance of the network, that distributes electricity throughout Manchester and the North West of England.
- ENW owns and is responsible for the construction and maintenance of the network that distributes electricity throughout the region. This includes the inspection and maintenance of assets which include overhead lines, underground cables, and transformers.

Carbon Budget to 2022		165,899 tCO ₂ e		Directly owned & controlled:	1,442 tCO ₂ e
Base Year:	2017/18	Total:	37,854 tCO ₂ e	Indirectly influenced:	36,412 tCO ₂ e



MCCB member updates



10. Electricity North West (ENW)

1. Urgent action 2019/20 - Your emissions: What is your organisation/sector going to do between April 2019 and March 2020 to reduce the CO₂ emissions it is directly responsible for?

This year we are launching our Carbon Plan which will set out our ambition to reach zero carbon by 2038 and a new annual reduction target from 2020/21. It will include activities to drive down our carbon emissions both on our own sites and from losses on the network. Between April 2019 and April 2020 we will be investing to accelerate our carbon emissions reductions at our sites by: increasing the monitoring of energy consumption across our sites to inform our strategies and we transform and renovate one of our depots into a zero carbon exemplar building to inform the development of our energy strategy across all our sites.

2. Urgent action 2019/20 - Your stakeholders: What is your organisation/sector going to do between April 2019 and March 2020 to influence or support your stakeholders to reduce their CO₂ emissions?

We recognise our central role in enabling our customers, both commercial and residential to adopt low carbon technologies such as EVs, clean generation and carbon free heat. We will investment in new network capacity to enable this transition to take place affordably across Manchester. Our Carbon Plan contains specific initiatives to both help businesses to understand how they can affordably decarbonise their activities and to demonstrate the benefits this can bring. We will also launch several initiatives to provide a stimulus to the communities we serve to drive down their carbon emissions. Internally we will be rolling out Carbon Literacy training to all our staff and supporting our colleagues with incentives, information and advice on how to take action in their own lives.

3. Your action plan 2020+: What is the current position with the plan for your organisation/sector for 2020+ and what work is needed to finalise it?

Our Carbon Plan includes an initial investment of over £28 million in carbon reduction enablement, education and exemplar projects designed to drive down carbon emissions. This investment will be delivered over the next four years. In addition we are seeking funding of some £12 million to enable energy efficiency and electrical losses reduction savings. If secured, these funds will directly benefit those customers suffering fuel poverty.

4. Support you need: What support will you need to implement your plan for 2020+, including any changes to local, GM, or UK policy or legislation? What are you going to do to share progress and learnings?

Leadership and a sense of community are central to delivering material change in carbon emissions. We will need the support of our stakeholders both in the delivery of our plans over the next four years and in securing future funding to take this essential work forward towards zero carbon."

MCCB member updates

10. Electricity North West (ENW)



Analysis of the data generated by the project has shown that implementing these techniques can provide a reduction of up to 10% in energy consumption on the LV network coupled with a reduction in HV losses of up to 15%.

www.enwl.co.uk/innovation/smart-street/

Case Study: ENW SMART Street

Smart Street is the first demonstration in Great Britain of a fully centralised low voltage network management and automation system. Its new techniques optimise voltage and configuration on high voltage (HV) and low voltage (LV) networks in real time using bespoke Spectrum Power 5 software developed by Siemens.

These techniques stabilise voltage and minimise the impact of low carbon technologies.

Once voltage is stabilised, it can be lowered to increase the efficiency of electricity networks and customers' appliances and therefore deliver energy savings, a technique known as conservation voltage reduction (CVR).

The trial sites served around 67,000 customers in Manchester, Wigan, Wigton and Egremont.

Key Assumptions

Key assumptions in emissions calculations

Introduction

In the absence of accurate 'primary' data (i.e. data provided directly by MCCB members), loose estimates for emissions have been formed using publicly available data and by applying a number of assumptions. Less accurate estimates have been justified on the basis that:

- BEIS city level emissions data will serve as the overall annual benchmark for how much emissions reduction has taken place at the city level. Therefore what companies choose to report (or not report) won't impact this benchmark.
- As a proportion of the city's emissions, adjustments to individual organisations are likely to be immaterial. To put this in context, no single organisation contributes over 5% individually (even MHPP at circa 5% have 18 members). There is also currently a large proportion of unallocated city emissions (circa 75%).
- Relative to defining the urgent, high impact nature of actions that organisations need to take, emissions reporting for this process is a lower priority. It is the emission saving actions that will be subject to more scrutiny by the MCCB, rather than the base year figures presented in this document.
- We do of course recognise that robust measurement is an important enabler to effective management within individual organisations. We do not wish to imply that it is no longer necessary or important at that level; it is more that for this document we are comfortable with the lower accuracy (in some cases) of figures presented for the reasons above.
- We encourage and anticipate better data to feed into this process over time which will naturally replace the data assumptions used in this document.

Key points of judgement

Common reasons that emissions figures may differ from organisation's currently reported figures include:

- **Assumptions around the City of Manchester proportion of overall footprint**
These were often made using crude apportionment and allocation techniques using suitable proxy values such as number of offices in the boundary as a % of the total number of offices).
- **Assumptions around indirectly influenced emissions that occur in the city boundary**
Also referred to as an organisation's Scope 3 emissions that occur within the City of Manchester. In the spirit of maximising action, it was deemed more appropriate to estimate *something* for this category, rather than leave blank or un-estimated completely. If omitted, figures may understate the potential level of influence that an organisation may have to bring meaningful change.

1. MAST

- Data based on the 2011-2016 [report](#): "5 years of cultural collaboration for a more sustainable Manchester" (which uses data reported via Julie's Bicycle).
- Estimates have been made for the 13 organisations that did not report in the 2011-2016 report, using an average of 13 that did (12 excluding the Lowry due to it being out of boundary in Salford).
- The City Council and University of Manchester (UoM) are reported separately. Broadcasters (BBC & ITV) and the Lowry are outside of the City boundary, however will be included in the process/represented in the plan.
- Indirect influence does not include emissions beyond transport to events (staff and public).
- Transport to events assumes every organisation has associated car travel of 25.78 tCO₂e per year, which assumes:
 - Weekly attendance of 4 x 450 people (450 is the average capacity, of the top 4 largest emitters in the report, excluding the Lowry)
 - 60% of attendees travel 3km by car
 - Average car emissions of 162.2g/km (which is an average of 2018 'average car' DEFRA factors for petrol, diesel, hybrid)

2. Bruntwood

- Emissions data within the direct influence and control is based on the [2017 Annual Review](#)
- Emissions data outside of Bruntwood's direct ownership and control is based on assumptions around tenant and employee transport:
 - 50,000 businesses + 650 employees apportioned to Manchester based on floorspace within the portfolio (41%) = 20,601 journeys per day
 - Assumed that 30% of these journeys are performed by car
 - Assumed distance travelled is 3km 4 times 46 weeks of the year
 - Average car emissions of 162.2g/km (which is an average of 2018 'average car' DEFRA factors for petrol, diesel, hybrid)

3. Faith sector

- Data is based on an estimate of the number of Churches (56), Mosques (80), Synagogues (54) and Hindu Temples (4) in the city boundary (194 in total).
- Assuming an average square meterage based on capacity of building (c250m²).
- Applying an average CO₂ per m² (0.023482 tCO₂/m²) to the total floorspace estimated.
- Average CO₂ based on Bruntwood's 2017 CO₂e per m² (acknowledging this will be a significant underestimate for the faith sector due to lower efficiency/less frequent use etc).
- Transport assumes an average of 50 people attending per building, of which 30% drive 3km per visit, and visit for 46 weeks of the year in a car producing 162.2g/km (which is an average of 2018 'average car' DEFRA factors for petrol, diesel, hybrid).

Key Assumptions (cont.)

Key assumptions in emissions calculations

4. NHS

- Based on NHS 2015 national [data](#) reported via the Sustainable Development Unit (SDU).
- Building Energy & Commissioned outside the NHS assumed within direct ownership and control.
- Procurement and travel assumed to be indirectly influenced.
- National figures apportioned to GM based on population (4.8% of the national based on 2017 ONS data). City of Manchester is then 19.5% of GM total.
- Of procurement and travel, only 5% and 30% are assumed to occur within the city boundary respectively. This is an arbitrary assumption, in need of refinement in the future.

5. Manchester City Council

- Footprint focuses on estate & fleet rather than impact via policy (this role is however acknowledged, but not quantified in the figures/charts).
- Directly owned and controlled emissions figures are based on 2017/2018 MCC reported data.
- Indirectly influenceable emissions figures will be confirmed in due course by MCC.

6. Manchester City Football Club

- Travel figures taken from the (Draft) Example of Match/Concert Day Impact report (not publicly available).
- Energy consumption for buildings (and other sources) taken from the (Draft) Corporate Responsibility – Headlines 2016–7 (not publicly available).
- Assumed 30% of Scope 1 transport occurs within the city boundary (with the exception of Aviation where it is all assumed to be out of boundary as per the WRI GPC accounting methodology). 30% is an arbitrary assumption, in need of rebutting in the future.
- Assumed 5% of Scope 3 transport occurs within the city boundary. This is an arbitrary assumption, in need of refinement in the future.

7. Manchester Housing Providers Partnership

- 2015 BEIS local emissions data (domestic total) apportioned based on the GM proportion of social housing providers (21%, ONS data 2011).
- Transport assumes 80,000 households have 1 car per household, with 50% of households making at least 1x 3km trip per day. This accounts for the emissions outside of the organisations of direct ownership and control.
- Average car emissions of 162.2g/km (which is an average of 2018 'average car' DEFRA factors for petrol, diesel, hybrid).

8. Manchester Metropolitan University

- 2017/18 data is used as the primary source.
- The sum of Scope 1 and 2 figures represent the Directly owned and controlled emissions.
- The sum of all Scope 3 emissions represents the Indirect supply chain and stakeholder emissions.
- 30% has been applied to the sum of all transport and supply chain Scope 3 emissions, which represents the Indirectly influenced and emissions that occur within the city boundary. 30% is an arbitrary assumption in the absence of city specific proxies.
- The split between residential & non-domestic buildings (for the pie chart) follows a 15:85 ratio as detailed in their earlier 15/16 scope 3 report [here](#)

9. University of Manchester

- Based on 2016/17 data.
- The sum of Scope 1 and 2 figures represent the Directly owned and controlled emissions.
- 30% of the sum of all Scope 3 emissions represents the Indirectly influenced and controlled emissions that occur within the city boundary. 30% is an arbitrary assumption in the absence of city specific proxies.
- All Scope 3 'in-boundary' emissions are assumed to relate to transport with the exception of water and waste treatment (which have been allocated against 'non-domestic').

10. Electricity North West

- Losses and operational emissions 'Business Carbon footprint' based on 17/18 [reporting](#) (page 12), scaled to the Manchester region based on Manchester's population proportion of the North West (7% of the North West region based on 2015 ONS data).
- Indirect emissions relate to Electrical losses (totaling 520,176 tCO₂e for the region).

11. Schools & Colleges

- Buildings emissions use EDASH report data for 17/18, for schools & colleges.
- Transport assumes 100 people per school/college, 30% of which drive 3km per day, 5 days per week, 42 weeks per year.
- Average car emissions of 162.2g/km (which is an average of 2018 'average car' DEFRA factors for petrol, diesel, hybrid).

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