

# NEXT STAGE BUSINESS CASE

*ROUTE TO ZERO*

INCLUSIVE GROWTH PORTFOLIO



## Document Control

Document title	Next Stage Business Case – Route to Zero		
SRO	Ian MacLeod		
Author(s)	Maria Dunn, Amit Bratch, Eleanor Crook, Pearl Roberts, Lewis Rees, Sophie Grimmer, Hannah McShane		
Version number	3.0	Document owner	Maria Dunn Pearl Roberts
Date approved		Document status	Final Document (Revised 18-08-2021)
Effective date		Approved by	

Version	Author	Date	Summary of changes
0.1	Pearl Roberts	19-03-2021	Initial Draft
0.2	Pearl Roberts	23-03-2021	Initial Draft reflecting ICC & BCC feedback on Economic and Commercial Cases
0.3	Pearl Roberts	30-03-2021	Final Draft reflecting ICC & BCC feedback
1.0	Pearl Roberts	31-03-2021	Final edits by SG and HM
2.0	Maria Dunn	28-07-2021	Edits to update R20 Team Structure, Financial Ask, Governance, Commercial Case
3.0	Maria Dunn	18-08-2021	Edits to reflect changes to team structure and impact on costings

---

## Contents

1. Executive Summary.....	7
1.1 Introduction.....	7
1.2 Strategic Case .....	7
1.2.1 The strategic context.....	7
1.2.2 The case for change.....	8
1.2.3 Route to Zero Strategy .....	9
1.3 Economic case – Delivering Route to Zero.....	10
1.3.1 The journey to net zero.....	10
1.3.2 The role of the Council .....	11
1.3.3 Route to Zero Portfolio .....	11
1.3.4 Route to Zero Portfolio – Wave 1 Projects .....	12
1.3.5 Strategic Framework: Route to Zero Portfolio – Future Waves of projects .....	15
1.3.6 Route to Zero Portfolio – Further Development & Implementation Plan .....	16
1.4 Commercial case .....	17
1.4.1 Commercial Approach.....	18
1.4.2 Adopting new technologies for sustainability.....	20
1.4.3 R20 Wave 1 Projects – Commercial Opportunities.....	22
1.4.4 R20 Projects - Commercial arrangements .....	22
1.4.5 R20 Projects - Procurement .....	23
1.5 Financial case .....	23
1.5.1 R20 Projects – Financial Case .....	24
1.5.2 R20 Wave 1 Projects - Financial expenditure .....	24
1.5.3 R20 Team - Financial expenditure.....	24
1.5.4 Overall affordability and balance sheet treatment.....	26
1.6 Management case .....	27
1.6.1 R20 Team: Purpose and Objectives .....	27
1.6.2 R20 Team: Organisation .....	30
1.6.3 R20: Governance Arrangements .....	31
1.6.4 Management Systems: R20 Portfolio Management – Strategic Framework .....	33

---

1.6.5	Management Systems: Project management arrangements .....	33
1.7	Recommendation .....	33
2	The Strategic Case .....	35
2.1	Introduction.....	35
2.2	Part A: the strategic context .....	35
2.2.1	Policy and regulatory context .....	37
2.2.2	Circular economy .....	39
2.2.3	Birmingham City Council resolutions .....	41
2.2.4	Birmingham City Council - progress to date .....	41
2.2.5	Route to Zero Strategy .....	42
2.2.6	Organisational overview and need for systems change .....	43
2.3	Part B: The case for change.....	45
2.3.1	Investment objectives .....	45
2.3.2	Existing arrangements.....	47
2.3.3	Business needs / Gaps between current and desired future state .....	47
2.3.4	Proposed arrangements – Additional capacity and capability .....	48
2.3.5	Main benefits criteria .....	48
2.3.6	Main risks .....	50
2.3.7	Constraints .....	50
2.3.8	Dependencies.....	50
3	The Economic Case .....	52
3.1	The Journey to Route to Zero.....	52
3.2	The Role of the Council .....	52
3.3	Route to Zero Portfolio .....	54
3.4	Route to Zero Portfolio - Wave 1 Projects .....	56
3.4.1	Buildings .....	61
3.4.2	Transport.....	63
3.4.3	Waste.....	64
3.4.4	Energy Supply.....	64
3.4.5	Natural Environment.....	65
3.4.6	Council Strategy, Engagement and Behaviour Change.....	66

---

3.5	Wave 1 Projects: Carbon Savings .....	67
3.6	Future waves of projects.....	68
3.7	Wave 1 – Scalable / Commercial Opportunities .....	70
4	The Commercial Case.....	71
4.1	Introduction.....	71
4.2	Route to Zero Portfolio – Commercial Approach.....	72
4.2.1	Adopting new technologies for sustainability.....	74
4.3	Route to Zero Portfolio – Wave 1 Projects - Commercial Opportunities .....	77
4.4	Route to Zero Portfolio - Future waves of projects .....	77
4.5	R20 Projects - Commercial arrangements .....	77
4.6	R20 Projects - Procurement .....	78
5	The Financial Case.....	79
5.1	Introduction.....	79
5.1.1	R20 Projects – Financial Case .....	80
5.1.2	R20 Wave 1 Projects - Financial expenditure .....	80
5.1.3	R20 Team - Financial expenditure.....	80
5.1.4	Overall affordability and balance sheet treatment.....	82
5.1.5	Benefits arising from the programme.....	83
6	The Management Case .....	86
6.1	Introduction.....	86
6.2	Proposed R20 team .....	86
6.2.1	R20 Team: Target Operating Model.....	86
6.2.2	R20 Team: Purpose and Objectives .....	87
6.2.3	R20 Team: Organisation .....	90
6.2.4	R20: Governance Arrangements .....	92
6.3	Portfolio Management – Strategic Framework .....	94
6.4	Programme & Project Management.....	94
6.5	Programme Plan.....	94
6.5.1	R20 Wave 1 Projects.....	94
6.5.2	R20 Subsequent Waves.....	97
6.5.3	R20 Portfolio Development and Delivery .....	97

---

6.6	Arrangements for benefits realisation .....	102
6.7	Arrangements for risk management .....	102

---

## 1. Executive Summary

### 1.1 Introduction

This Next Stage Business Case seeks approval:

- To progress the Route to Zero Wave 1 projects that support the Council's ambition to become carbon neutral.
- Of the strategic framework used for the appraisal and definition of Route to Zero projects. This framework will be used to progress the identification, development and management of an ongoing suite of carbon-reducing initiatives and projects.
- Undertake further work to define and confirm the role of the Council as set out in Section 1.3.2.
- To invest £740k per annum, plus a one-off investment of £100k for pump priming, in establishing a Route to Zero team, reporting to the recently (July 2021) appointed Assistant Director-Route to Net Zero Carbon. This Route to Zero team will provide enhanced capability and capacity to lead and direct the Council's Route to Zero programme.

Note: This investment is in addition to:

- Funding approved in February 2021 for the Assistant Director-Route to Net Zero Carbon - £141k p.a.
- Existing funding for 1 fully funded establishment post that will transfer to the R20 Team - £59k p.a.

### 1.2 Strategic Case

#### 1.2.1 The strategic context

In January 2021, Cabinet endorsed the 'Investing in our Future' report which sets an ambitious 10-year vision and provides a clear roadmap on where it wants to be as an organisation and what is needed to get there.

The Council is progressing a cross-cutting corporate delivery portfolio comprising:

- Inclusive Growth: stimulating growth benefitting those who need it while achieving carbon goals. Route to Zero (R20) is one of the key programmes within the Inclusive Growth Portfolio.
- City Help & Support: shifting the emphasis from crisis to presentation.
- Organisational Structure: building trust and stimulating conversations, participation and engagement.
- Fit for Purpose Council: being enabled by a fit for purpose council.

There is an international, national and local strategic imperative to reduce carbon emissions and strenuous effort is being applied at all levels of government to determine how best to achieve net zero targets.

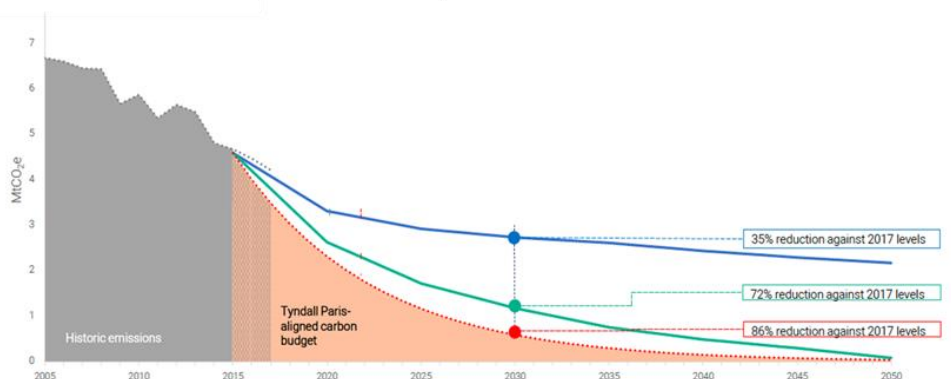
BCC declared a climate emergency on 11<sup>th</sup> June 2019 and made the commitment to take action to reduce the city's carbon emissions and limit the climate crisis. The ambition was set for the Council and city to become net zero carbon by 2030, or as soon as possible thereafter as a 'just transition' allows to deliver the inclusive, clean growth and jobs that are needed to sustain the city's economy. This is the city's 'Route to zero' (R20). On 25<sup>th</sup> June 2019 the Council's Cabinet agreed to add a new priority to the Council Plan which states that Birmingham will be "a city that takes a leading role in tackling climate change".

At an international level the UNFCCC in its February 2021 report highlighted that current levels of climate ambition are very far from achieving Paris Agreement goals. The assessment revealed that the emissions goals, collectively, will only put the world on course to produce 1% less greenhouse gases in 2030 than it did in 2010. In comparison, the reduction will need to be 25% to meet the Paris Agreement's 2°C trajectory and 45% to achieve alignment with 1.5°C. Other notable figures and commentators such as Bill Gates in his guide to tackling global warming, 'How to Avoid a Climate Disaster' highlight the need for an innovation effort at scale with a huge investment in research and development for new technologies that solve the 'hard' to reach areas.

### 1.2.2 The case for change

Consultants Anthesis were commissioned in January 2020 to undertake a study setting out the current emissions baseline for the city and to make recommendations which could be implemented to reduce carbon emissions. Whilst progress has been made in tackling historic emissions, carbon reductions will be harder to achieve over time and will require the Council to determine how best to allocate its limited resources to optimise carbon reductions across the city.

**Figure 1: Projected climate reduction scenarios for Birmingham by Anthesis**





The Anthesis report highlights:

- Total emissions across Birmingham are 5.2m tCO<sub>2</sub>e.
- Emissions across the city, and outside the direct control of BCC, represent 92% of total emissions.
- Emissions directly relating to BCC operations represent 8% of the total emissions.
- Emissions directly relating to BCC operations that are currently in scope for action/intervention, excluding procurement and social housing represent 1% of the total emissions.
- To stay within the Paris-aligned carbon budget a net reduction of 86% from 2017 levels would be required by 2030.

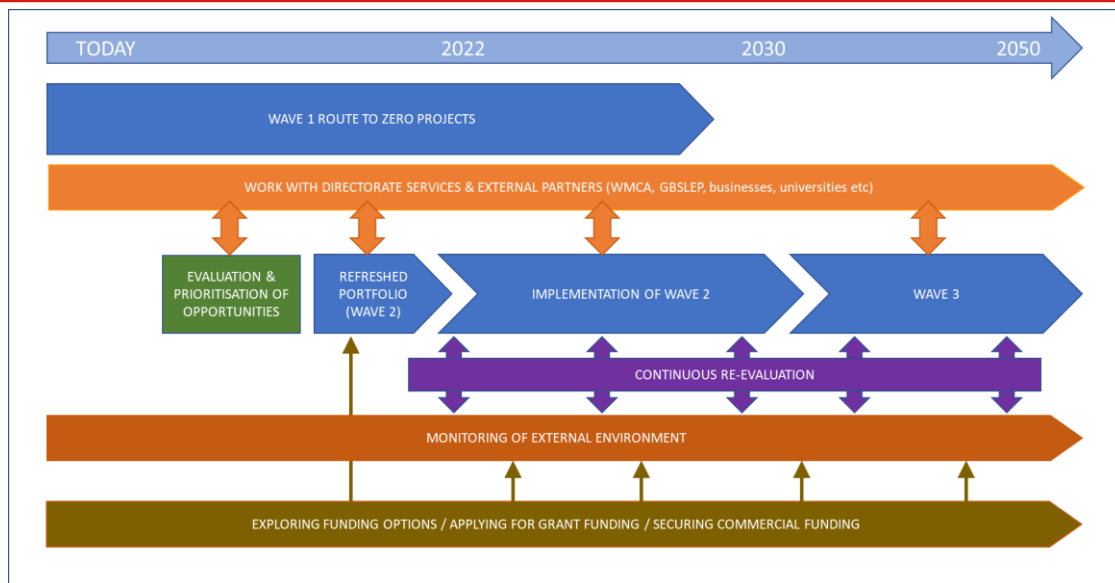
Since the declaration, progress is being made through a series of carbon-reducing activities, as reported to Council in January 2021. BCC recognises that there is much more to do and acknowledges that much of what is required lies outside the direct control of the Council. This will require the Council to use its influence and powers to tackle emissions outside its direct control to assist the city region in tackling climate change, support sustainable regeneration, social inclusion and economic growth, and to lobby externally to attract government and private sector investment and influence national strategies and policies.

### **1.2.3 Route to Zero Strategy**

The scope for the whole of Birmingham achieving a just transition to net zero carbon by 2030 is extremely challenging and unlikely to be achieved. Similarly, the Council's action to tackle its own emissions is tough; it will require concerted action (including consideration of carbon offsets) to be taken at scale and pace.

The strategy, which extends the Council's current approach, is for BCC to provide leadership and set an example, beginning with its own controllable emissions (1% of Birmingham's total emissions), then addressing emissions associated with other activities such as procurement/supply chain and (7%) and critically, using its influence, planning and other powers to tackle the major part of Birmingham's emissions (92%) that are outside the council's direct control. The strategy is summarised below. It is based on adopting a data-driven, structured analytical approach to determine the solutions that make the biggest contribution towards their carbon zero target, offer the best value for money and are technically feasible.

### **Figure 2: Route to Zero Strategy**



## 1.3 Economic case – Delivering Route to Zero

### 1.3.1 The journey to net zero

Achieving net zero will require significant investment. At a national level the National Audit Office (NAO) has highlighted the enormous scale of the challenge and the cross-government coordination required to achieve net zero. It has estimated the investment needed at 'hundreds of billions' to tackle the unprecedented changes to the way electricity is generated, how people travel, how land is used, how buildings are heated, building flood defences and dealing with the health impacts of global warming. The Climate Change Committee estimated in December 2020 that the UK's low carbon investment must scale up to £50 billion each year from 2030 to 2050 to deliver net zero. Both the NAO and the Climate Commission have signalled that a major strengthening of UK policies and a major nationwide investment programme are required, led by Government but also funded by private companies and individuals.

At a local level the costs of achieving net zero are highly uncertain, although it is clear that there are a series of long term R20 projects requiring significant investment and the Council will need to play a critical role in attracting and securing investment to progress its net zero carbon ambitions. For example, retrofitting Birmingham's housing stock (circa. 60,000 homes) is estimated to be between £25,000 to £45,000 per home to EPC 'C'/'B', or up to £2.5 bn in total. The Council is acting to trial work on retrofitting in testing new technologies and the effectiveness of energy solutions to inform its spending decisions recognising that this is an issue that cannot be tackled one house or flat at a time but one that needs a coordinated, area-based renewal programme involving both the public and private sectors.

---

### 1.3.2 The role of the Council

Within this context, recognising that the Council has finite resources at its disposal and faces many more years of fiscal restraint, the role of the Council in delivering its net zero ambition and a financially self-sustaining R20 portfolio is to:

- Provide strategic leadership and direction to shape the Council's strategic plans and the R20 portfolio over the next 30 years to get Birmingham to net zero.
- Facilitate the definition and delivery of projects to reduce carbon emissions (a) within the direct control of the Council, (b) with its suppliers, using the levers available to it and (c) in areas outside the direct control of the Council, by stimulating and influencing action across the city.
- Lobby externally to (a) attract public and private sector investment to the West Midlands, and Birmingham City, (b) ensure that regional inputs are made to the development of national strategies and policies and (c) position Birmingham at the vanguard of the zero-carbon agenda.
- Secure funding and other resources to proactively accelerate the pace and scale of R20 projects delivery.
- Engage citizens in understanding what is needed and why, enabling them to be involved in decision making and securing behaviour change in making low carbon choices.

These are expanded in the Economic Case. In due course further analysis will need to be completed to confirm and reinforce the role of the Council in delivering the R20 portfolio and achieving net zero.

### 1.3.3 Route to Zero Portfolio

The R20 Programme is charged with developing a coherent portfolio of carbon-reducing projects and a delivery roadmap that supports the Council's ambition to become carbon neutral. The Council does not have the resources to deliver all R20 opportunities/projects, it will therefore need to prioritise those it pursues using a structured, evidence-based approach to identify those that deliver the greatest contribution. This may mean re-prioritising some existing projects.

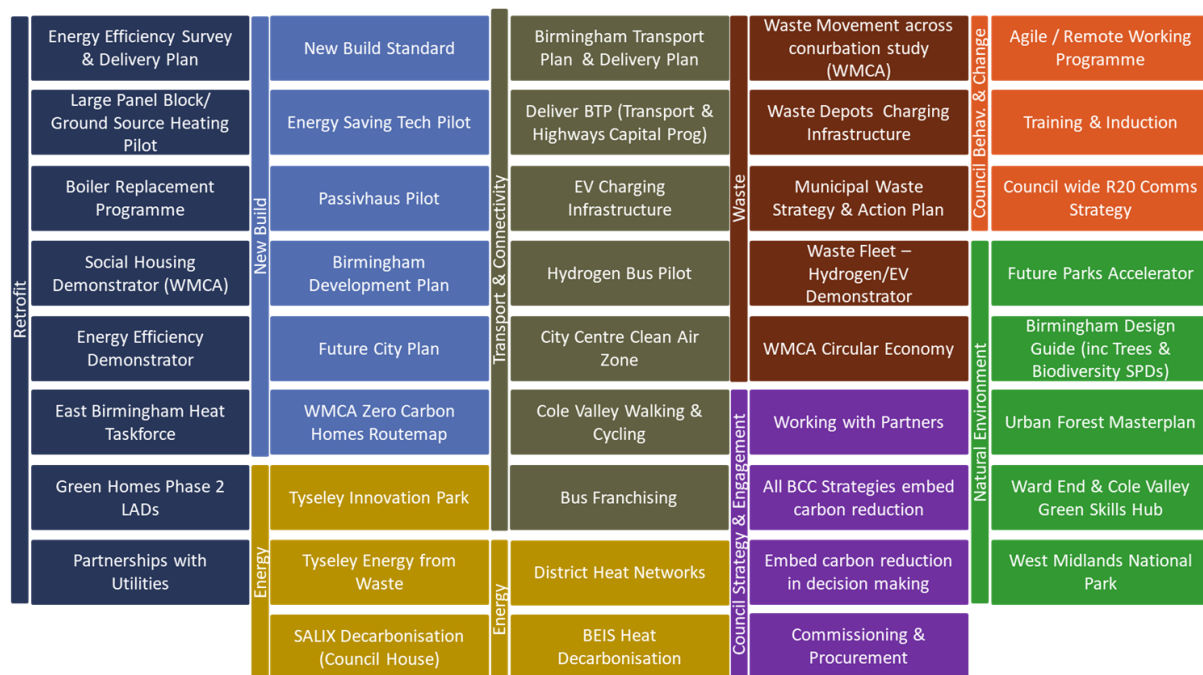
The long list of R20 opportunities and projects includes a series of actions that the Council could undertake over the coming two decades to achieve carbon neutrality for the city identified within the Carbon Emission Reduction Study by Anthesis, June 2020 the Element Energy Report, January 2020, the R20 Report to Council in January 2021 and current Council in-flight and planned projects that have the potential to contribute to carbon reduction. It also includes opportunities emerging through the work of Birmingham's Climate Assembly

(formerly the R20 Taskforce), Government initiatives, and through partners across Birmingham including WMCA, TfWM, GBSLEP, universities and businesses.

The Council has determined that the Route to Zero Wave 1 projects will focus on the priority actions and projects identified in the report to Council in January 2021 alongside a number of in-flight and planned projects that have the potential to contribute to carbon reduction. These are summarised in the figure below.

Note: The R20 Programme is currently supporting delivery of the suite of Route to Zero Wave 1 projects. There is likely to be some adjustment to the constituent projects, any changes will be consistent with the priority action plan reported to Council in January 2021 and will be agreed with the R20 Programme SRO.

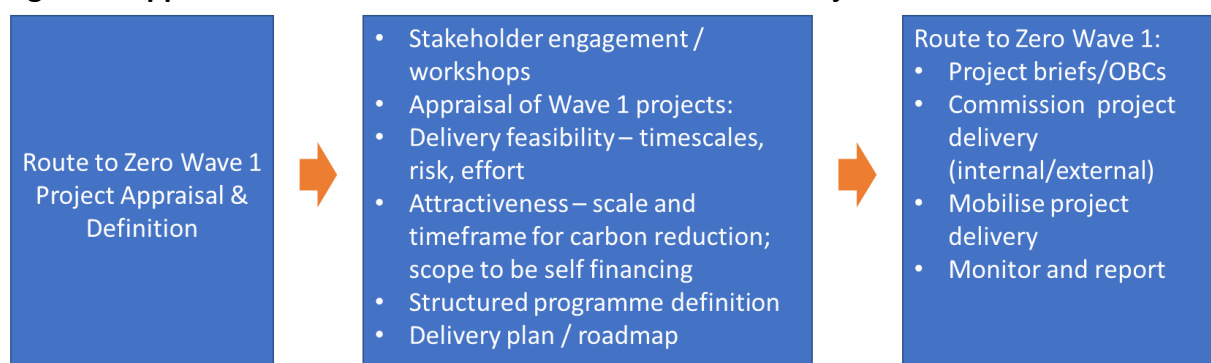
**Figure 3: Route to Zero Wave 1 Projects**



### 1.3.4 Route to Zero Portfolio – Wave 1 Projects

The Route to Zero Wave 1 projects have been subject to a structured review to determine the veracity of their delivery plans, their attractiveness in terms of contribution to net zero carbon and other inclusive growth outcomes in support of a just transition. They have not, at this stage been compared to the wider set of opportunities. They will be re-evaluated alongside other opportunities as the portfolio is refreshed. This is summarised in the figure below; it provides a strategic appraisal framework for the development of subsequent waves of R20 projects.

**Figure 4: Appraisal and Definition of Route to Zero Wave 1 Projects**

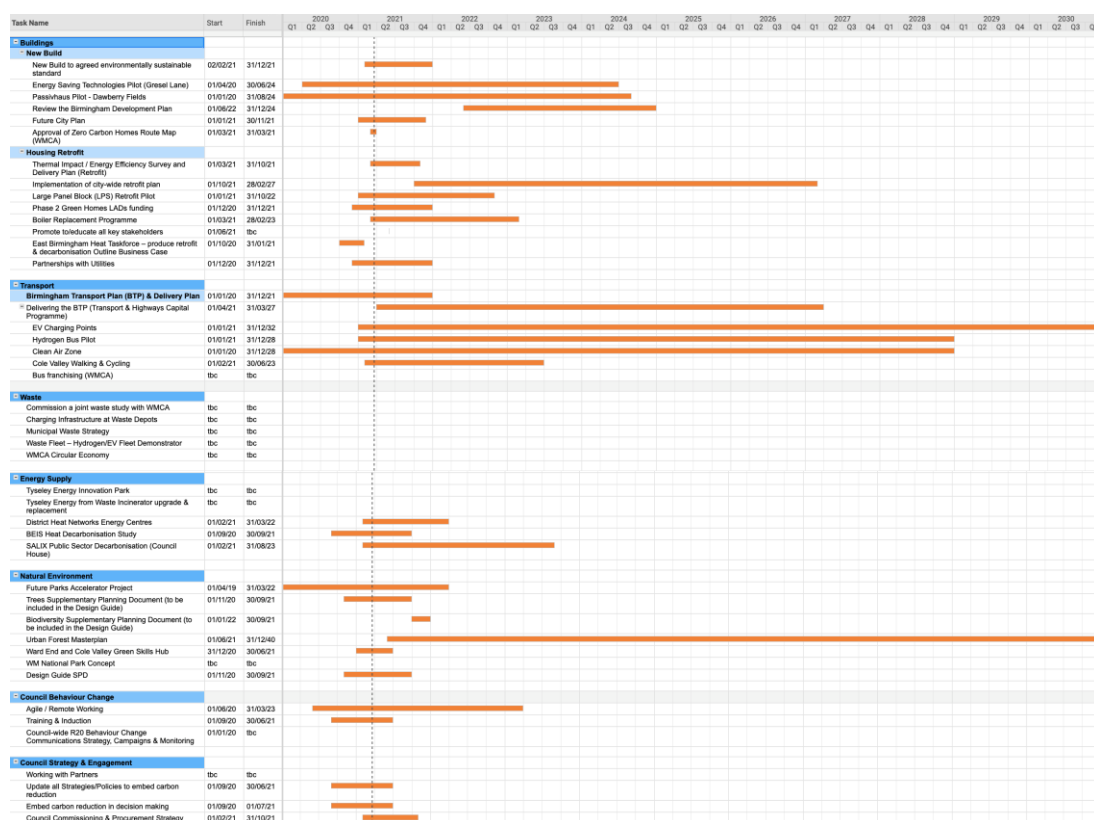


The initial suite of Route to Zero Wave 1 has the potential to make a contribution of 80,778 tCO<sub>2</sub> emissions savings in 2021-22 (1.8%) to BCC's carbon zero ambitions as shown below.

Theme	Baseline Carbon Emissions (t)		2021/22 Carbon Emission Reductions (t)	
	Council	City-wide	Council	City-wide
<b>Estimated Annual CO<sub>2</sub> Baseline 2019</b>	<b>417,772</b>	<b>4,578,000</b>	<i>n/a</i>	<i>n/a</i>
<b>1) Buildings – Retrofit</b> Large Panel Block Retrofit and Ground Source Heating Pilot Phase 2 Green Homes LADs funding (500 homes) Boiler Replacement Programme (1,000 units)	7,339	3,129,000	2,224 -0.5%	2,224 -0.04%
<b>2) Transport</b> Through delivery of BTP projects in the Transport and Highways Capital Programme in 2021/22	1,191	1,264,000	<i>n/a</i>	51,105 -1.1%
<b>3) Waste</b> Ongoing projects including reconfiguration of household recycling and negotiation of energy from waste contract will deliver carbon savings, but data is not available at this time.	<i>n/a</i>	71,000	<i>Data not available</i>	<i>Data not available</i>
<b>4) Energy Supply</b> Council House LED carbon savings expected but not yet available. Heat network decarbonisation awaiting BEIS recommendations to support creation of business case.	<i>Included within themes 1, 3 and 6</i>	<i>Included within themes 1, 3 and 6</i>	<i>Data not available</i>	<i>Data not available</i>
<b>5) Natural Environment</b> 2021/22 savings through Urban Forest Masterplan with year-on-year incremental increase	<i>n/a</i>	-4,700 (CO <sub>2</sub> sequestration)	<i>n/a</i>	96 -0%
<b>6) Council: Strategy, Engagement &amp; Behaviour Change</b> Green electric for Council properties Through agile/remote working programme	334,861 7,831	<i>n/a</i>	28,597 -6.8%	28,597 -0.6%

<b>Subtotal Annual CO<sub>2</sub> Emissions</b> Council savings: 30,821t City-wide savings: 82,022t			<b>386,951</b> 92.6%	<b>4,495,978</b> 98.2%
<b>New Build</b> Carbon avoided from - Passivhaus Pilot – Dawberry Fields (48 units) - 2,850 units to agreed environmentally sustainable standard - Energy saving technologies pilot at Gresel Lane (36 units)	<i>n/a</i>	<i>n/a</i>	72 -0%	756 -0%
<b>Estimated Annual CO<sub>2</sub> Emissions 2021</b>			<b>386,879</b> 92.6%	<b>4,495,222</b> 98.2%

The summary delivery plan is shown in the figure below.

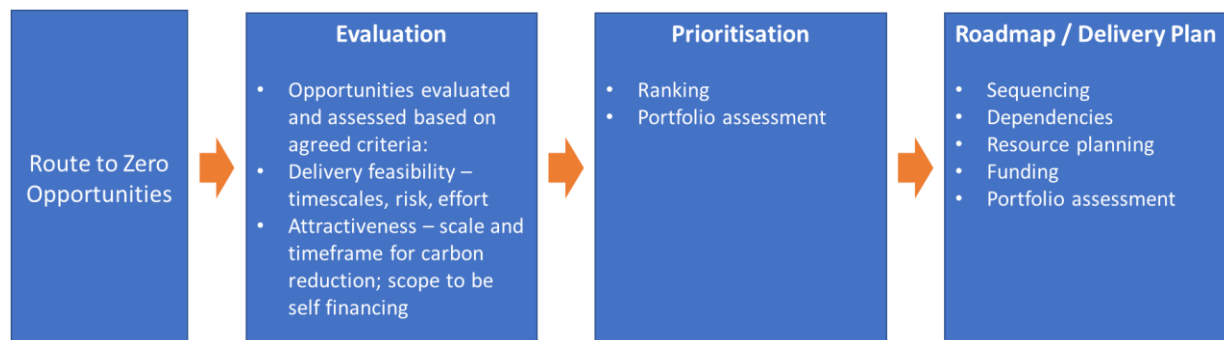
**Figure 5: R20 Wave 1 Delivery Projects: Summary Delivery Plan**

### 1.3.5 Strategic Framework: Route to Zero Portfolio – Future Waves of projects

The suite of projects developed so far is evidence of the Council's commitment to achieving its carbon reduction targets and provides a focus for the Council's R20 journey. However, it does not cover the totality of the work the Council needs to progress. The analysis shows that in addition to projects to address its own emissions, a very significant proportion of what is required lies outside the direct control of the Council and across multiple fronts from mobility and transit, to industrial processes, natural environment and behaviour change. To lock in forecasted and future net zero target reductions, BCC needs to continue to review the current projects' carbon impact and value for money and develop the R20 portfolio to incorporate additional projects, expanding scope and reach beyond the projects approved by the Council in January 2021.

Further, more detailed work in identifying, costing and prioritising opportunities identified for BCC and more widely across the city is required. It is proposed that the strategic framework applied to the appraisal and definition of the Route to Zero Wave 1 projects is adopted and used to evaluate and prioritise subsequent waves of Route to Zero opportunities and projects which will address 'big ticket' items (Wave 2) and take advantage of the evolving political and technological environment (Wave 3).

**Figure 6: Strategic Framework – R20 Portfolio Management**

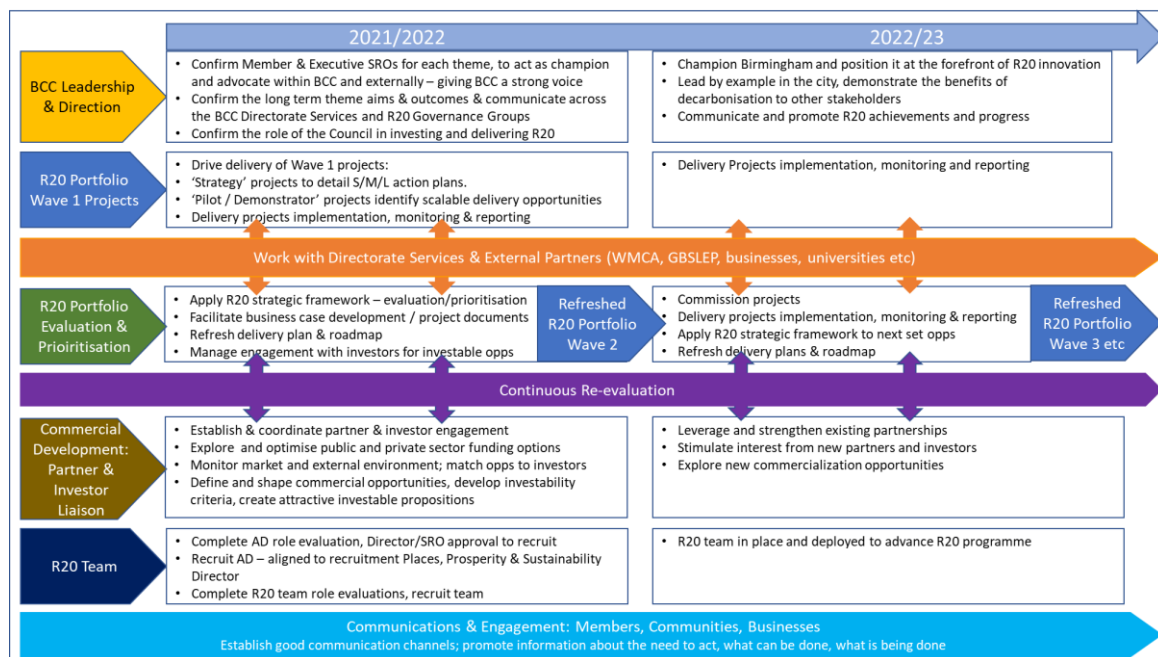


This will enable opportunities to be mapped as shown below to clearly identify which opportunities should be progressed in favour of others. Those opportunities that have both high attractiveness and high feasibility will be taken forward into subsequent waves in the portfolio. The portfolio of initiatives will be reviewed and updated regularly in the light of evolving information and developments. New initiatives may be added to the development portfolio, and existing ones dropped, in order to maximise the overall (economic and social) return on investment within the Council’s affordability envelope.

### **1.3.6 Route to Zero Portfolio – Further Development & Implementation Plan**

To deliver on the Council’s strategy (as described in Section 1.2.3) the programme of work for the R20 team over the next 24 months is summarised in the figure below. This is described in detail in the Management Case.



**Figure 7: R20 Portfolio Development and Delivery 2021/22 – 2022/23**

## 1.4 Commercial case

Stated simply, the UK and the world have until 2050 to eliminate all carbon dioxide emissions if they are to minimise the worst risks of global warming. BCC's target to become net zero carbon by 2030, or as soon as possible thereafter as a 'just transition' allows and to be a city that takes a leading role in tackling climate change is bold and ambitious and it requires bold and radical action.

Mark Carney, the UN Special Envoy on Climate Action and Finance and UK Financial Advisor for COP26, has emphasised that "the transition to net zero is creating the greatest commercial opportunity of our age.....investing for a net zero world must go mainstream".

BCC has a great opportunity to provide visionary leadership and to adopt a proactive, enterprising and innovative approach to:

- Influence policy – at a national level and at a local level (as it is doing for example through the Birmingham Development Plan, Future City Plan, Birmingham Transport Plan, Urban Forest Masterplan etc).
- Drive the innovation pipeline - investing and backing ideas and pioneering solutions, including investing at the start of the development cycle when they are higher risk, and facilitating their wider adoption which will, in turn, help to bring down the 'price premium' to encourage take-up and sustainability.

- Act collaboratively to advance shared ambitions to reach net zero - co-creating investable, financially attractive propositions:
  - Using local assets and joining up Birmingham's community of partners (WMCA, other local authorities, LEPs, businesses, academics, community groups, interest groups etc) to turn ideas into demonstrators, develop proof cases through pilots and then scaling them to create economically viable, investable propositions and de-risk investment for private finance.
  - Making best use of market expertise, for example inviting academia and industry, together with entrepreneurs to create innovative solutions and solve climate change challenges; this could include retrofitting existing housing stock, carbon capture, manufacturing, construction, human-robot interaction e.g. autonomous vehicles, agritech etc.
- Explain and promote behaviour change to Birmingham's citizens and communities – e.g. to encourage responsible consumption, use of sustainable transport, renewable energy consumption, buying energy-saving appliances, controlling heating to save energy and reducing waste.

Building the commercial case and support for increased 'commercialisation' in order to realise BCC's R20 aims is challenging in the context of ongoing budget pressures, reduced central government funding and increased competition for grant and investment funding.

Developing the R20 portfolio presents an opportunity to manage risks and uncertainties across the portfolio as a whole whereby the occasional failure of individual projects to perform to agreed financial tolerances may be acceptable if there are equivalent (preferably larger) over-achievement against targets on other projects in the portfolio. This will require continuous management and monitoring of risk and uncertainty at both project and portfolio level, with tolerances for risk being set at both levels. This will require a different commercial and risk-based approach whereas much attention is given to maximising opportunities to improve financial performance as to minimising downside risk.

#### **1.4.1 Commercial Approach**

The Council needs to look beyond traditional public funding routes, adopt a more proactive commercial approach and a different approach to risk in developing and implementing its R20 portfolio. This will include:

- Consideration of a range of potential commercial opportunities from investment in existing ventures (for example Tyseley Energy Park), extending existing pilot and pathfinder initiatives (for example the hydrogen bus pilot, electric vehicle charging infrastructure), new and emerging initiatives/technology solutions (example new technologies for reducing energy demand, carbon capture) and generating efficiencies/cost avoidance.
- Having investability as a focus when defining and packaging projects to attract investment. This will include taking an entrepreneurial approach by working with

academia, other local authorities, industry and investors to invite their expertise in tackling common problems e.g. retrofitting existing housing stock across Birmingham.

- Developing an appreciation and understanding of emerging market technologies capacities, capabilities, and trends and, through advocating the preferred options, secure interest from potential partners.
- Managing risk at both a project level and a portfolio level, for example larger financial tolerances may be set at project level if the capacity for risk absorption at portfolio level is sufficient and projects that present a risk profile outside the specified tolerance will need to be paused until the risk profile can be reduced or terminated if the risks cannot be mitigated.
- Creating the appropriate contractual framework for each project and programme, taking account of vendor operational commercial drivers and financial measures.
- Adopting proactive partnership models with:
  - SMART quantitative and qualitative measures and incorporating negotiated median and stretch R20 targets.
  - Clarity around BCC obligations and vendor performance goals and measures.
  - Active account engagement and management incorporating a shared approach to risk management.

This approach will enable the Council to:

- Build intelligent client capability, accelerating R20 outcome delivery through adopting a more commercial mindset to drive maximum value from BCC strategic suppliers, driving out costs and securing long term value.
- Increase the pace and scale of deployment, for example driving increased use of clean energy by mapping opportunities and plans for integrated systems across Birmingham geographies and Council functions to integrate heat, power, transport with spatial planning and digital infrastructure.
- Enable increased synergies and value through collaboration across the city region, sharing resources, increasing purchasing power to reduce unit costs, and maximising value from energy from waste and local heat supply.
- Align R20 projects/initiatives with future funding options. Accessing central government funding aligned to policy reforms/imperatives will require the Council to create a compelling narrative on how the city and region meet national ambitions and position the city as a place to invest in as funding and finance options become available. This is likely to be positively received by central government who are keen to demonstrate progress with 'shovel-ready'/'ready to go' projects. However, BCC also needs to seek ways of generating money out of zero carbon / green projects. This may require taking calculated risks in terms of investment for potentially high returns and benefits (social, environmental and/or economic). Funding and financing opportunities will vary according to project scopes, business needs/gaps, risk profile, required carbon savings, available solutions, methods of service delivery and implementation routes. In summary, potential options could include the following:

Private funding; Public funding (Central government, WMCA, Existing council funds, Other grants); Self-sustaining; Debt financing; Equity financing; Joint ventures; and Public-Private-Partnerships

- Make sound investment decisions e.g. investing in pathfinder projects with the aim of stimulating the market, investing as a ‘first mover’, investing in providing pump priming investment, making investments in embryonic/emerging green technology companies and taking a longer term view on ROI, borrowing (with due consideration of the many competing demands on the Council’s financial assets) and partnership with the private sector.
- Leverage the opportunities presented by the shared ambitions of local authorities in the West Midlands and the WMCA shared ambition to reach net zero; working collaboratively, engaging and lobbying central government and private sector investors to secure maximum impact.
- Harness the ingenuity and innovation across a range of partners including businesses and academia; this could for example include competition-based mechanisms to invite others to tackle the city’s ‘net zero’ challenges such as retrofitting BCC’s domestic housing stock of circa 60,000 units; inviting the market to respond to the challenge and bring forward innovative solutions.

#### **1.4.2 Adopting new technologies for sustainability**

Adopting new technologies at scale will be a key enabler to supporting BCC in delivering its net zero ambition. It is recognised that carbon reduction/green technologies and solutions are rapidly evolving, and the Council will need to monitor and evaluate the potential afforded by such solutions/innovations and their adoption. The Council will consider the most appropriate commercial approach in relation to deploying and contracting proven established technologies and in building project-based partnerships around emerging technology.

Reducing carbon emissions across the breadth of BCC services will require a range of technologies to be considered, each of which are at different levels of maturity. Where mature technologies are deployed through R20 projects, it is likely that a more traditional commercial engagement model will be adopted with a focus on cost of acquisition, service, total cost of ownership, and target low carbon measures. Where the Council’s R20 projects are ‘pathfinders’, exploring the application of new technologies, BCC can adopt a more involving partnering engagement model which reflects the learning from earliest innovators, shaping the delivery to align with BCC objectives and establishing a shared roadmap to deliver increasing levels of carbon reduction and other benefits.

BCC also recognises that many of the technologies and innovative solutions needed to get to net zero e.g. carbon capture technologies, low carbon transport and heat innovation do not

yet exist or are in early stages of development and therefore not available at the scale and price point for wide scale adoption.

‘Climate tech’ encompasses a broad set of sectors all engaged in tackling the challenge of decarbonising the global economy, it includes cross-cutting areas, such as carbon capture and storage. Examples of the breadth of technology options are shown below. The Council’s approach to managing the suite of R20 projects as a portfolio enables it to make informed decisions about when and how it determines to pursue such solutions.

**Figure 8: ‘Climate Tech’ Options**

Energy	Mobility & Transport	Food, Agriculture & Landuse	Heavy Industry	Built Environment	GHG Capture & Storage	Climate & Earth Data Generation
<ul style="list-style-type: none"> <li>• Renewable energy generation (e.g. large scale wind and solar power)</li> <li>• Nuclear generation</li> <li>• Grid management</li> <li>• Waste heat capture/conversion/ storage technology</li> <li>• Alternative fuels</li> <li>• Energy storage (thermal or electricity)</li> <li>• Low GHG extraction and maintenance</li> <li>• High efficiency energy intensive electronics, and smart monitoring/ management</li> </ul>	<ul style="list-style-type: none"> <li>• Low GHG Air Transport</li> <li>• Low GHG Shipping</li> <li>• Micro-mobility</li> <li>• Low GHG Light and Heavy Duty</li> <li>• Road transport: EVs &amp; High Efficiency vehicles</li> <li>• Efficient transport systems e.g. public transit and biodiesel innovation</li> <li>• Batteries/Fuel Cells</li> </ul>	<ul style="list-style-type: none"> <li>• Alternative foods/low GHG-proteins</li> <li>• Vertical &amp; urban farming (including aquaponics)</li> <li>• Agricultural biotech/genomics &amp; natural solutions</li> <li>• Precision agriculture &amp; robotics</li> <li>• Low GHG/energy efficient equipment</li> <li>• Earth &amp; Marine protection</li> <li>• Deforestation prevention, reforestation &amp; afforestation</li> <li>• Land use management</li> <li>• Value chain GHG reduction</li> <li>• Low GHG Fertilizers, Pesticides, Insecticides &amp; therapeutics</li> </ul>	<ul style="list-style-type: none"> <li>• Low GHG chemicals (beyond plastics)</li> <li>• Low GHG Iron, Steel and Aluminium</li> <li>• Low GHG plastics or plastic alternatives</li> <li>• Low GHG Concrete and Alternatives for construction</li> <li>• Energy/resource efficient manufacturing processes</li> <li>• Extreme durability for energy intensive materials</li> <li>• Low GHG extraction and supply</li> <li>• Transformative circularity, recycling and materials efficiency solutions</li> <li>• Industrial residuals treatment and management</li> <li>• Low GHG: other materials</li> </ul>	<ul style="list-style-type: none"> <li>• High efficiency fixtures and fittings</li> <li>• High efficiency lighting</li> <li>• High efficiency space-water heating and cooling</li> <li>• Building level (electricity and thermal) storage</li> <li>• Low GHG construction processes</li> <li>• High efficiency urban spaces and communities</li> <li>• Transformative circularity and recycling</li> <li>• Commercial and residential residuals treatment and management</li> <li>• Green building retrofits in major cities</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon capture, usage &amp; storage (CCUS)</li> <li>• Biomass Uptake of CO<sub>2</sub> (excluding afforestation and land management)</li> <li>• Geo-engineering based direct air capture and storage</li> <li>• GHG monitoring and management platforms</li> </ul>	<ul style="list-style-type: none"> <li>• Climate/earth data generation</li> <li>• Low-GHG satellites and sensors</li> </ul>

The investment portfolio is of scale, complex and will require significant funding to complete. Selecting from competing priorities - where, when and how much investment - to achieve net zero will be key consideration for BCC. BCC’s commercial approach will need to evaluate how much of a ‘first mover’ premium it is willing to fund to push to be at the forefront in delivering on its ambitious targets. It is possible, but not certain that Government will compensate early adopters for higher costs. To take advantage of “seed funding” BCC needs to be agile and constantly re-evaluate the business cases for investment as the landscape evolves. With the accelerating evolution of technologies adopting smarter connected capabilities, BCC will need to be mindful of the risks of being a ‘first mover’ as the upgrade pathway may limit access to desired future benefits such as IoT and Analytics enablement, the ability to undertake predictive maintenance or identify citizens in fuel poverty.

---

### 1.4.3 R20 Wave 1 Projects – Commercial Opportunities

The R20 programme has identified a series of Wave 1 opportunities which are of scale, commercial in nature and have the potential to contribute significantly to BCC strategic objectives and R20 aims, three of the opportunities additionally have the potential to deliver revenue to BCC. These projects will be a core focus for the R20 programme from April 2021, they include:

- **Retrofit** – for an identified subset of the housing stock, exploring a scale exemplar retrofit and financing project which adopts the principles of the circular economy and identifies private sector investment such that the delivery would be at minimal cost to BCC.
- **District Energy Scheme** – coordinate efforts across a variety of internal BCC and external stakeholders to create a business case to support decarbonisation and expansion of the district energy scheme, which delivers on R20 aims and is revenue generating for BCC.
- **Electric Vehicle Charging Infrastructure** – Explore options to optimise EV charging infrastructure.
- **Procurement** – work to implement intelligent client / category transformation and build a business case to coordinate procurement activity across the wider West Midlands region, targeting delivery of CO<sub>2</sub> savings and lower contract costs, driven by purchasing economies of scale.
- **Low Emission Buses** – working with TfWM and providing leadership across Birmingham in decarbonising transport and driving zero-emission adoption electric / hydrogen buses.

### 1.4.4 R20 Projects - Commercial arrangements

The commercial case for the delivery of individual Route to Zero projects in the portfolio will be developed on a case-by-case basis as required and include consideration of the procurement strategy, risk allocation, contractual arrangements, implementation timescales, commercialisation options and accountancy treatment. This reflects the composition of Wave 1 projects which incorporates both strategic policy and delivery projects and projects at different stages in their development lifecycle. Those projects at formative stages in their development will develop their commercial case in increasing level of detail as they create outline and full business cases in readiness for implementation. A core principle in developing the commercial case within business cases will be the aim to be financially self-sustaining and to assess opportunities to generate a return on investment in the long term.



---

#### **1.4.5 R20 Projects - Procurement**

It is anticipated that the Council will commission a range of internal and external partners to develop and deliver defined projects.

The Council will lead by example in its own commissioning and procurement of goods and services. It has undertaken to ensure that the procurement of any external services and delivery partners includes a commitment to reduce/eliminate carbon emissions and to supporting suppliers/partners in the local area where appropriate. Within the Route to Zero Wave 1 portfolio Procurement has initiated a project focused on updating the Council's Commissioning and Procurement Strategy to incorporate more rigorous carbon criteria, work with all commissioned services and major procurements to ensure they have carbon reduction measures and targets in place and ensure that contracts are proactively managed to monitor their effectiveness.

### **1.5 Financial case**

Achieving net zero will require significant investment. The NAO estimates this at 'hundreds of billions.' The level of investment needed underscores the need for the Council to adopt a strategic commercial approach to increase investment for the R20 portfolio.

Investors are increasingly alive to the importance of addressing the priorities of climate change, social justice and poverty. Similarly, Covid-19 has demonstrated the ability for partners to act together and at pace when faced with a global challenge. The economic recovery provides an opportunity to build back better and support a socially just transition.

Investors are actively pursuing options to offer capital funding based on recognising the long term (30-year) investment return benefits to secure up front capital through a combination of public and private sources. Lower interest rates support looking at a range of financial vehicles with a view to investment in low carbon infrastructure. Options include Green city bonds, Green Infrastructure funds, city Angel investment funds, community green grants and crowd funding.

A key role for BCC will be to:

- Secure funding and other resources, optimising use of available public sector funds and developing and cementing relationships with investors.
- Co-create investable, financially attractive propositions, using local assets and joining up its community of partners (WMCA, LEPS, businesses, academics, community groups, interest groups etc) to turn ideas into demonstrators, develop proof cases through pilots and then scale them to create economically viable, investable propositions with a credible route to financing and de-risking investment for private finance.

- Determine the Council's commercial approach in making investment decisions as described in the Commercial case e.g. investing in pathfinder projects with the aim of stimulating the market, investing as a 'first mover', investing in providing pump priming investment, making investments in embryonic/emerging green technology companies and taking a longer term view on ROI, borrowing (with due consideration of the many competing demands on the Council's financial assets) and partnership with the private sector.

The R20 Team will work proactively with both public and private sector partners to identify potential funding sources, shape R20 opportunities (e.g. new technologies, new products, pathfinder projects etc) to be investment ready and lobby for and support bidding and commercial negotiations with investors.

### **1.5.1 R20 Projects – Financial Case**

The financial case for the delivery of individual Route to Zero projects in the portfolio will be developed on a case-by-case basis including consideration of financing options, managing risks effectively, affordability with the expectation of the portfolio being financially self-sustaining in the long term<sup>1</sup> whilst at the same time delivering against its R20 objectives.

### **1.5.2 R20 Wave 1 Projects - Financial expenditure**

As outlined in the Economic Case above, the appraisal of Route to Zero Wave 1 projects indicates that a number of key contributing projects such as retrofit, district heat networks, energy from waste and zero emissions vehicles are at an early stage of development and further development work is required to build fuller business cases and develop investable propositions over the next 6-12 months.

### **1.5.3 R20 Team - Financial expenditure**

It is proposed to establish a dedicated R20 team to take R20 forward (as described in the Management Case). The estimated funds needed for the R20 team are summarised in the table below:

---

<sup>1</sup> The R20 portfolio will be managed using a proactive commercial approach to optimise inward investment (from public and private sector sources). Determining the long term portfolio financial sustainability will capture project and wider public sector (economic, jobs, skills, social, health) benefits.



	Cost £ 2021-22 (assumes 25% of total for January to March 2022)	Cost £ 2022-2023	Total
<b>R20 Team salaries (new posts only, excluding AD post and the three existing, transferring posts)</b>	£82,239	£328,955	£411,194
<b>Existing Establishment Posts without Budget (see para.3.x. below)</b>	£36,669	£146,674	£183,343
<b>Additional external consultancy/subject matter expertise (commissioned as required)(1)</b>	£25,000	£100,000	£125,000
<b>Notional pump-priming fund allowance (2)</b>	£25,000	£75,000	£100,000
<b>Support Function Capacity (e.g. Legal, Finance, Procurement, Other)</b>	£41,000	£164,000	£205,000
<b>Total</b>	<b>£209,908</b>	<b>£814,629</b>	<b>1,024,537</b>
<b>Notes:</b> (1) Commissioned as required to support the development/delivery of individual projects. (2) Seed corn funding to stimulate and pump prime pathfinder projects to be in a position to secure future public/private sector investment.			

The financial implications summarised in the table above is focused on the short-term (2021-22 (partial year) and 2022-23). The additional capacity and capability will enable BCC to drive the R20 programme in the short term 2021-22 and 2022-23. A revenue budget necessary to fund the ongoing resource requirements from 2022-23 onwards will be established during the forthcoming Medium Term Financial Planning (MTFP) process.

The R20 team will support the development of business cases to secure carbon reduction, these are likely to require long term funding. The R20 team will work to identify and securing funding from the public and private sector. They will actively manage the R20 portfolio to ensure that the R20 opportunity/project pipeline is maintained. The R20 team

includes a Finance and Bids Manager who will provide critical support in developing material and content to support bids and shaping and packaging bids to secure investment.

The financial case for the medium to longer term R20 portfolio and its constituent projects beyond 2021-22 and 2022-23 will be developed in the series of individual business cases with the objective of the entire portfolio being financially self-sustaining in the long term. Detailed cash flows for individual R20 projects will be developed in the individual business cases.

#### 1.5.4 Overall affordability and balance sheet treatment

The first six months of the staffing establishment costs in 2021-22 (Jan to March) and 2022-23 (April to June) will relate to the creation of systems and processes to implement and measure programme parameters; along with 100% consultant/subject matter expertise and 20% support function capacity and will be classified as transformational in accordance with the Statutory Guidance on the Flexible Use of Capital Receipts 2016 and this expenditure will be funded from the £15m Inclusive Growth 'Transformation' pot, (part of the £65m sourced from capital receipts in 2021-22). The remaining nine months of 2022-23 will be a combination of ongoing transformation (50%) to embed R20 across the Council and 50% operational business as usual. It is proposed that the remainder of the costs for the R20 team to the end of 2021-22 are funded from the Delivery Plan Reserve resources, as agreed during the Council's 2021-22 budget setting:

	Actual Categorisation	Transformational		Revenue		20%		Capital			
		TRANSFORMATION SPEND (Revenue expenditure but capitalisable)		OPERATIONAL SPEND (Revenue expenditure)		SUPPORT FUNCTION CAPACITY - assumed at 20% of revenue spend (Revenue expenditure)		CAPITAL SPEND (Capital expenditure)		TOTALS	
Assumed Categorisation	£k	2021/22	2022/23	2021/22	2022/23	2021/22	2022/23	2021/22	2022/23	2021/22	2022/23
Transformational	Transformation spend (able to fund from capital receipts up to 31 March 2025 but not thereafter)	0	0	220	599	44	120	0	0	264	719
Revenue	Operational spend (revenue expenditure)	0	0	0	0	0	0	0	0	0	0
Revenue Ongoing	Indefinite Operational (revenue) expenditure	0	0	0	253	0	51	0	0	0	304
Capital	Capital spend that is directly related to the creating of a tangible asset (capitalisable)	0	0	0	0	0	0	0	0	0	0

In line with the commentary at 1.5.3, an appropriately sized revenue budget to finance the ongoing costs will be established as part of the MTFP process.

The R20 team will play a critical role in embedding R20 considerations and portfolio management processes throughout the Council, promoting a fundamental transformation in the delivery of services with the aim of reducing carbon emissions. It is anticipated that this will apply to approximately 50% of future staffing establishment costs and subject to

---

Statutory Guidance beyond 2021-22 this may be classified as transformational and chargeable against capital receipts.

The R20 team will play a critical role in embedding R20 considerations and portfolio management processes throughout the Council, promoting a fundamental transformation in the delivery of services with the aim of reducing carbon emissions. It is anticipated that this will apply to approximately 50% of future staffing establishment costs and subject to Statutory Guidance beyond 2021-22 this may be classified as transformational and chargeable against capital receipts.

It is expected that the portfolio will incorporate a balanced mix of cost efficiency, cost reduction and income generating projects. Every effort will be made for the R20 portfolio to be financially self-sustaining in the long term<sup>2</sup>; indeed, the recent (December 2020) Climate Change Committee report “The Sixth Carbon Budget: The UK’s path to Net Zero”<sup>3</sup> highlights that the savings derived from carbon reduction over time have the potential to ‘cancel out’ the investment costs. This objective will primarily be met with government and private sector investment.

## **1.6 Management case**

### **1.6.1 R20 Team: Purpose and Objectives**

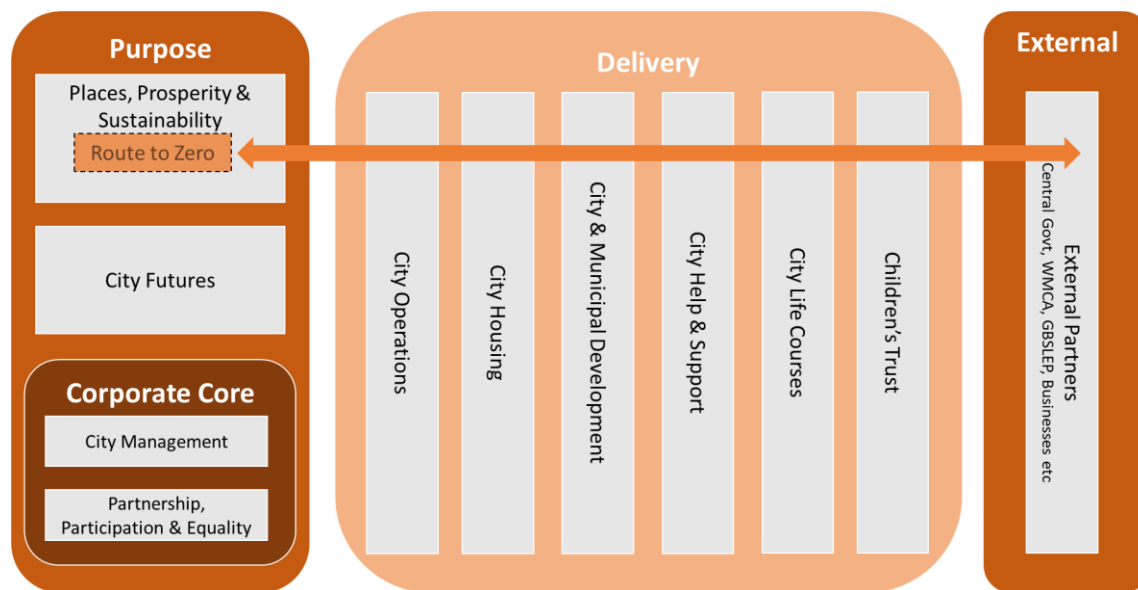
To deliver the Council’s R20 Strategy, it is proposed to establish a dedicated and experienced R20 team within the Places, Prosperity and Sustainability Directorate (as set out in the report endorsed by Cabinet in January 2021 and in the BCC Development Delivery Business Case). The R20 team will, led by a new Assistant Director position and will work with colleagues across the Council and with external partners to lead, shape and progress delivery of the R20 portfolio; this is illustrated in the figure below.

**Figure 9: R20 within the new corporate structure**

---

<sup>2</sup> The R20 portfolio will be managed using a proactive commercial approach to optimise inward investment (from public and private sector sources). Determining the long term portfolio financial sustainability will capture project and wider public sector (economic, jobs, skills, social, health) benefits.

<sup>3</sup> <https://www.theccc.org.uk/publication/sixth-carbon-budget/>



The R20 team will be part of the Council's Purpose function, reporting directly to the Director for Places, Prosperity and Sustainability, in some instances it is likely that members of the R20 team may have a dotted reporting line to Delivery units in supporting the delivery of specific R20 projects and opportunities.

The purpose of the R20 team is to support the organisation in delivering its net zero carbon ambition. The team will be focused on R20 strategies, priorities and targets and will commission work from Delivery units. They will drive efforts to progress carbon reduction, aligned to inclusive and resilient growth. The team will bring a mix of strategic, commercial and delivery skills and a dynamic approach to identifying and evaluating opportunities and translating them into realisable projects that enable the portfolio to be financially self-sustaining in the long term. The team will have a fundamental role in leading the shift in behaviours and managing relationships both within BCC and externally with government, WMCA, LEPs, businesses, residents and investors.

The R20 team will perform a critical corporate role in:

- Leading and directing the Council's strategies and policies to address the climate crisis that are inclusive and capable of delivering the route to net zero carbon.
- Working with the Council's delivery functions and partnerships, joining them up and holding them accountable.
- Working with external bodies, including WMCA, GBSLEP and central government departments in shaping and implementing the R20 portfolio.
- Leading on key relationships relevant to R20: international, national, regional, city wide and local - increasing Birmingham's profile, generating investment in R20 across the city, winning consent for change.

The R20 Team will drive forward the R20 strategy and programme of work, coordinating efforts across BCC delivery functions and with external partners. They will operate as a 'think and do' team:

- Bringing together policy, research, emerging solutions and best practice; this will cover policy, strategy, new technology and new products and applying and adapting them for the local context.
- Shaping and developing a coherent and prioritised portfolio of investable R20 projects and plans for action/delivery.
- Commissioning BCC directorates/services and other partners (e.g. WMCA, University of Birmingham, Tyseley Energy Park) to develop and deliver defined projects.
- Positioning Birmingham as a 'testbed' / hub for climate innovation to attract inward investment and green businesses.
- Identifying and securing funding from the public and private sector.
- Continuously managing, monitoring and evaluating the R20 portfolio to ensure it remains relevant, projects are delivered, and defined outcomes and targets are achieved.

The major interfaces between the R20 team and the other change portfolios and entities in the new corporate structure are described below:

- Places, Prosperity & Sustainability: R20 will ensure that consideration of carbon reduction is embedded in all Purpose functions and programmes e.g. strategic place shaping, strategic asset management, development, industrial and employment strategy.
- City Housing: R20 will ensure all housing stock is managed to agreed environmentally sustainable / energy efficiency standards. It will coordinate expert contributions and provide robust challenge to support the creation of retrofit business case(s) which are ambitious with regard to R20 and wider Council aims such as reducing fuel poverty, creating new low-carbon sector jobs and building low-carbon industries.
- City Operations and City & Municipal Developments: R20 may commission projects for example: to improve the energy efficiency of council owned buildings and other non-housing assets such as leisure centres and schools, to decarbonise transport, to improve waste management and adopt a circular economy strategic approach, to extend use of renewable and low carbon energy.
- City Help and Support: R20 may commission City Help & Support to undertake programmes of work to further some of its socio-economic aims. For example, the development of green skills; construction skills to increase skills levels and support the creation of jobs.
- New Ways of Working: R20 may commission projects which support remote and agile working and innovative uses of new technologies.

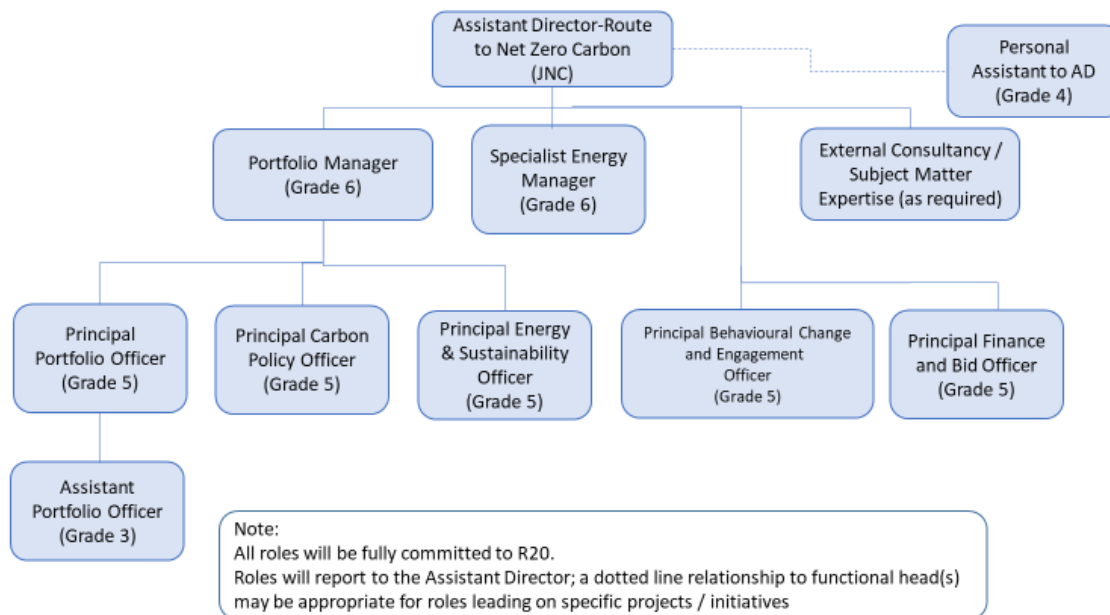
---

### **1.6.2 R20 Team: Organisation**

The team will be headed by an Assistant Director responsible for leading and driving the development and delivery of the R20 portfolio. The Assistant Director will spearhead BCC's response to the climate emergency, taking a lead role within the Council and externally to establish Birmingham as an exemplar of best practice in the local government sphere. The Assistant Director will have a critical role to play in working across the Council, with political and executive stakeholders, officers across all Directorates and with programme leads within the Inclusive Growth Portfolio. They will also foster relationships and work closely with external partners and investors including for example, influencing government policy by directly engaging with government, working across Birmingham city region with WMCA, the Local Enterprise Partnerships and other public and private sector partners.

The R20 team structure is illustrated in the figure below. Roles and responsibilities for the team have been developed in discussion with senior officers in Planning and Development and with reference to arrangements in organisations (for example, Bristol and Manchester) which are similarly pursuing an ambitious carbon reduction agenda.

**Figure 10: R20 Team: Organisation**



### 1.6.3 R20: Governance Arrangements

BCC has begun to embed governance arrangements which reflect the need for system level change within the Council and also at a city-wide level, this includes:

- A cross party and multi-agency Climate Change Taskforce<sup>4</sup>, was established. The Task Force has helped to shape the priority projects reported to Council in January 2021 which form the basis for the Route to Zero Wave 1 project. The Taskforce was established to support the preparation of the Route to Zero Action Plan, following approval of this Action Plan at Full Council in January 2021, the role of the Taskforce was reviewed and it transitioned to the Climate Assembly in June 2021. The Climate Assembly first met in June 2021 and will meet 3 times per year, providing a platform to share successes and progress updates and to share knowledge and expertise.
- A cross-party R20 Advisory Committee has been set up, which it is expected will meet once per month<sup>5</sup> following the initial mobilisation and set up period to April 2021. The R20 Advisory Committee is chaired by the Cabinet Member for Transport &

<sup>4</sup> The cross-party and multi-agency taskforce is chaired by the council's Cabinet Member for Transport and Environment and includes representation from Conservative, Liberal Democrat and Green councillors, members of the West Midlands Combined Authority, the Local Enterprise Partnerships, Chamber of Commerce and representatives from faith communities and the business, health, education and third sectors.

<sup>5</sup> The group has been established to fulfil a cross party motion, which was agreed at City Council on 15th September 2020, for the creation of an Advisory Committee to oversee delivery of the City Council's own actions and progress towards meeting the net zero target.

Environment with overall responsibility for leadership and direction of the R20 agenda. The committee is comprised of 3 Cabinet Members, 3 Labour Councillors and 3 Opposition Members R20 will also form part of the council's scrutiny work programme.

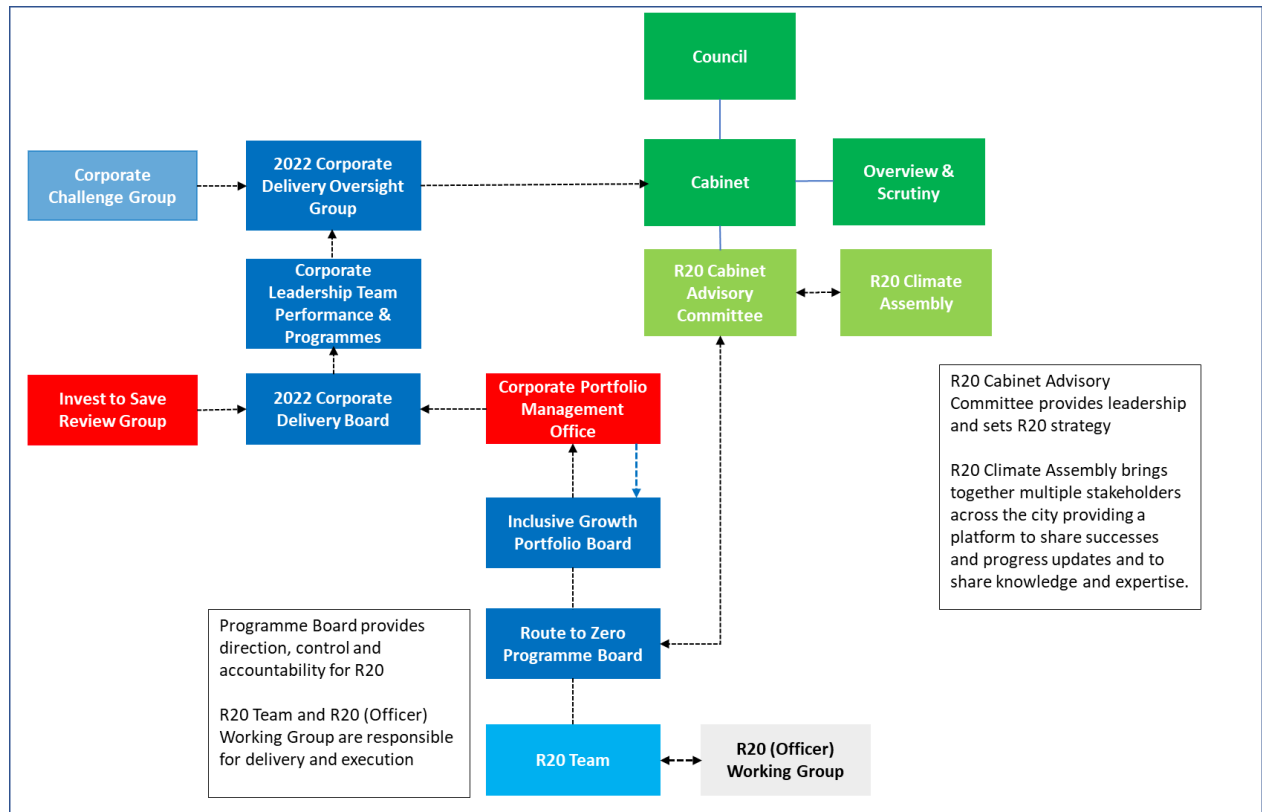
- A council internal working group has also been created, including representatives from a number of service areas who are working on delivering the Council's existing commitments, including the early actions outlined in the February 2020 Council Report and those set out within the Route to Zero Action Plan reported to Council in January 2020. The role of the group is to coordinate R20 across council functions and ensure there is cohesive and coherent response in addressing climate issues.

A R20 Programme Board will be established to oversee and drive the work of the R20 portfolio. The primary purpose of the R20 Programme Board is to drive forward its component projects to deliver desired programme outcomes and realise intended benefits. The R20 Programme Board, appointed by the Senior Responsible Owner, includes senior representatives from the areas of the business most affected by the programme, together with any other key support and / or supplier representatives. It is anticipated that specialist officers/project leads will be invited to this meeting as required to present on projects they lead.

The R20 Programme Board will report to the Inclusive Growth Delivery Board. The Inclusive Growth Delivery Board (along with all strategic delivery programmes) report, via the Corporate Programme Management Office (CPMO), through the Corporate Delivery Board, which is the main decision-making body for matters pertaining to the delivery of approved Portfolio programmes, and to the Corporate Delivery Oversight Group, which brings together Members and Chief Officers to oversee the cross-cutting corporate delivery Portfolio. The position of the R20 Programme Board in the Council's governance structure is shown in the figure below.



**Figure 11: R20 Governance**



#### 1.6.4 Management Systems: R20 Portfolio Management – Strategic Framework

The strategic framework used to define, prioritise and develop the Wave 1 R20 projects, as described in the Economic Case, will continue to be used to maintain a sustainable suite of R20 initiatives and opportunities.

#### 1.6.5 Management Systems: Project management arrangements

R20 projects will be managed using corporate standard project management methods and the monthly reporting templates implemented by the Corporate PMO in line with the 'Wheel of Fire' or other structures put in place to manage programmes.

### 1.7 Recommendation

It is recommended that the Council proceed to:

- Progress the Route to Zero Wave 1 projects that support the Council's ambition to become carbon neutral.

- 
- Adopt the strategic framework used for the appraisal and definition of Route to Zero projects to be used to progress the identification, development and management of an ongoing suite of carbon-reducing initiatives and projects (as set out in Section 1.3.5).
  - Undertake further work to define and confirm the role of the Council (as set out in Section 1.3.2.)
  - To invest £740k per annum, plus a one-off investment of £100k for pump priming, in establishing a Route to Zero team, reporting to the recently (July 2021) appointed Assistant Director-Route to Net Zero Carbon. This Route to Zero team will provide enhanced capability and capacity to lead and direct the Council's Route to Zero programme.

Note: This investment is in addition to:

- Funding approved in February 2021 for the Assistant Director-Route to Net Zero Carbon - £141k p.a.
- Existing funding for 1 fully funded establishment post that will transfer to the R20 Team - £59k p.a.

**Signed:**

**Date:**

**Senior Responsible Owner  
Route to Zero**

---

## **2 The Strategic Case**

### **2.1 Introduction**

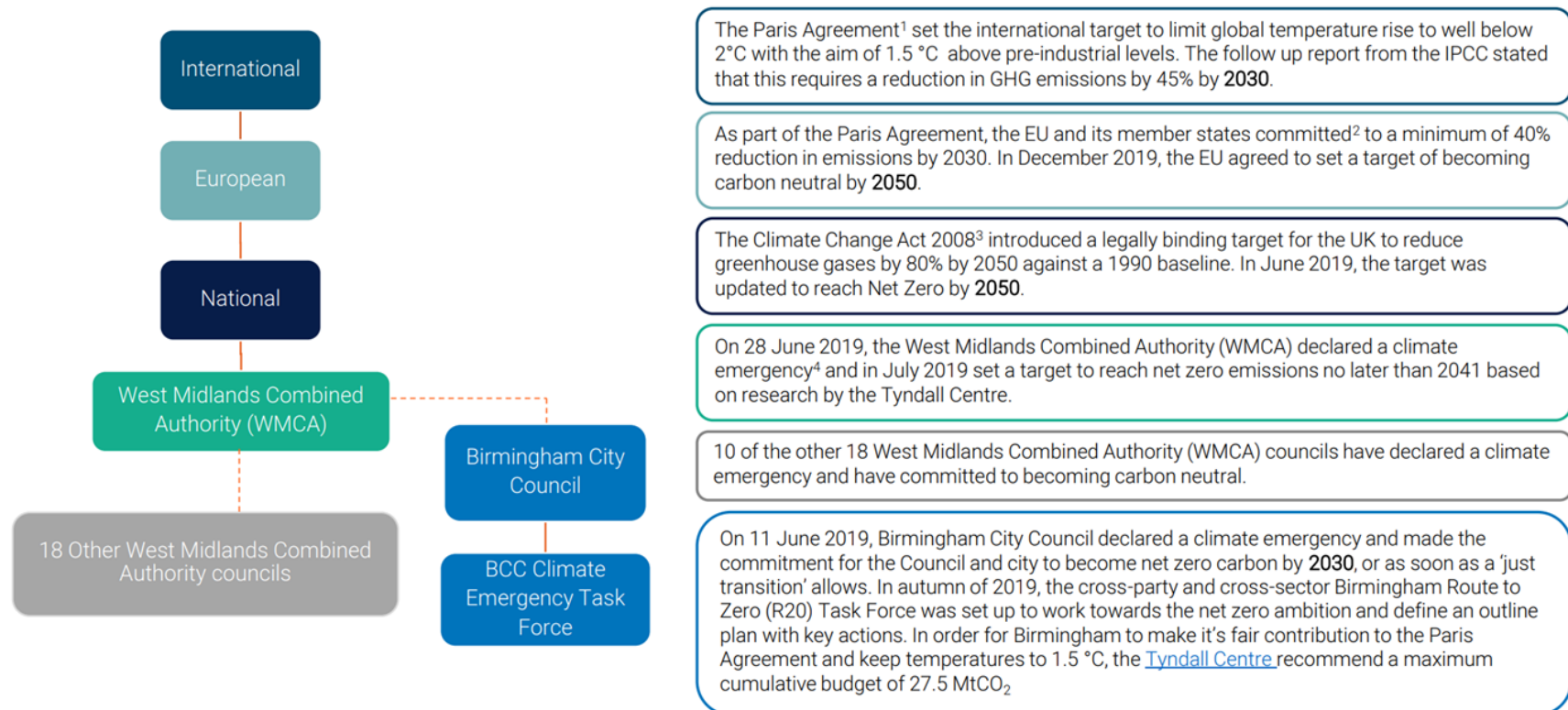
The purpose of this section is to explain how the scope of the R20 portfolio fits within the existing international and national context of climate change regulations and BCC's business strategies, and to set out the compelling case for change. It outlines the proposal to put in place enhanced capability and capacity to develop and deliver a portfolio of investable projects that support BCC's R20 vision for the City Council's operations and the whole city to become carbon neutral.

### **2.2 Part A: the strategic context**

There is an international, national and local strategic imperative to reduce carbon emissions and strenuous effort is being applied at all levels of government to determine how best to achieve net zero targets. This section sets out the initiatives being progressed at international, national and local levels, as highlighted in figure 12 and described below.

**Figure 12: Commitment to act**

## Climate Change Obligations



1- [The Paris Agreement](#) and [IPCC 1.5 Report](#)  
2- [The INDC of the European Union](#)  
3- [The Climate Change Act](#)  
4- [West Midlands Climate Action Plan](#)

---

### 2.2.1 Policy and regulatory context

The **UN Framework Convention on Climate Change** (UNFCCC) was established in 1994 with a membership of 197 countries. Its ultimate goal is to prevent “dangerous human interference with the climate system”. The **Kyoto Protocol** was adopted in 1997 and entered into force in 2005. It sets out individual plans and targets for industrialised countries in relation to the United Nations Framework Convention on Climate Change. These countries are to limit and reduce greenhouse gases (GHG) emissions in accordance with their agreed individual targets. The UNFCCC itself requires those countries to adopt mitigation policies and measures and to report back their progress periodically.

The **Paris Agreement** was signed in 2016 and sets out how countries will deliver on their UNFCCC commitments post 2020. The Agreement binds countries to commit to “nationally determined contributions” and establishes procedures to hold them accountable as well as to strengthen ambition in the years ahead. In February 2021 a UNFCCC report highlighted that current levels of climate ambition are very far from achieving Paris Agreement goals. The assessment revealed that the emissions goals, collectively, will only put the world on course to produce 1% less greenhouse gases in 2030 than it did in 2010. In comparison, the reduction will need to be 25% to meet the Paris Agreement’s 2°C trajectory and 45% to achieve alignment with 1.5°C. Other notable figures and commentators such as Bill Gates in his guide to tackling global warming, ‘How to Avoid a Climate Disaster’ highlight the need for an innovation effort at scale with a huge investment in research and development for new technologies that solve the ‘hard to reach’ areas.

November 2021 will see the 26<sup>th</sup> **United Nations Climate Change Conference of Parties**, known as **COP26**, hosted by the UK in Glasgow. The summit aims to bring parties together to accelerate action towards the goals of the Paris Agreement and the UNFCCC. As host of COP26 the UK is aims to inspire climate change action ahead of the conference. The UK and Italy have assumed joint Presidency of COP26 during 2021, calling on all countries to set out ambitious and long-term strategies to net zero emissions in advance and to mobilise around four goals:

- A step change in commitments to emissions reduction.
- Strengthening adaptation to climate change impacts.
- Getting finance flowing for climate action.
- Enhancing international collaboration, including for the COP26 campaigns on energy transition, clean road transport and nature.

The **Climate Change Act 2008** is a UK parliamentary act committing the Secretary of State to ensure that the country’s net carbon emissions for all six Kyoto greenhouse gases are at least 80% lower by 2050 than the 1990 baseline. In order to advise the UK and devolved Governments and Parliaments on tackling and preparing for climate change, the **Committee on Climate Change** (CCC) was founded under the Climate Change Act in December 2008 as an independent non-departmental public body. The CCC advise on setting carbon budgets

as a ceiling on the level of economy-wide emissions that can be emitted in a five-year period. The CCC reports regularly to the Parliaments and Assemblies on the progress made in reducing greenhouse gas emissions. Following the CCC's recommendations, in June 2019 Parliament amended the Climate Change Act to contain a commitment to **net zero greenhouse gas emissions by the UK by 2050**. Furthermore, Parliament introduced the new Environment Bill on 15 October 2019. The bill sets out ambitious propositions to enhance the UK's standards of environmental protection after leaving the European Union. The establishment of a new public body, the Office for Environmental Protection (OEP), which will hold government and public bodies accountable on their environmental commitments, was announced.

In November 2020 the Prime Minister announced a **10-point plan for a green industrial revolution** to help local authorities achieve carbon neutrality and jobs. The government's green industrial revolution aims to provide £12 billion in investment to create and support up to 250,000 highly skilled green jobs in the UK, and spur over three times as much private sector investment by 2030. There will be a particular focus on North East, Yorkshire and the Humber, West Midlands, Scotland and Wales which Birmingham can build on.

The Prime Minister has announced new investment into several core areas which; these are a good fit with Birmingham's net zero carbon ambitions. Investments include:

- **Carbon capture** benefiting regions with industries that are particularly difficult to decarbonise: **£200 million** of new funding to create carbon capture clusters. This will help support 50,000 jobs.
- **Hydrogen:** Up to **£500 million**, including for trialling homes using hydrogen for heating and cooking, starting with a Hydrogen Neighbourhood in 2023, moving to a Hydrogen Village by 2025, with an aim for a Hydrogen Town.
- **Nuclear:** **£525 million** to help develop nuclear plants, and research and develop new advanced modular reactors.
- **Electric vehicles:** the UK will end the sale of new petrol and diesel cars and vans by 2030. Funding to support this acceleration:
  - **£1.3 billion** to accelerate the rollout of charge points for electric vehicles.
  - **£582 million** in grants for those buying zero or ultra-low emission vehicles.
  - Nearly **£500 million** for the development and mass-scale production of electric vehicle batteries
- **Homes and public buildings:** **£1 billion** next year into making new and existing homes and public buildings more efficient, extending the Green Homes Grant voucher scheme by a year and making public sector buildings greener and cutting bills for hospitals and schools, as part of the Public Sector Decarbonisation Scheme.
- **Greener maritime:** **£20 million** for a competition to develop clean maritime technology, such as feasibility studies on key sites, including Orkney and Teesside.
- Other significant investment set out over the last year:
  - **£1 billion** energy innovation fund
  - **£5 billion** for alternative greener ways of travel
  - **£5.2 billion** to create for new flood and coastal defences in England.

The 2021 spring budget saw the UK government place **green investment** at the centre of plans for economic recovery, aligning the goal of economic growth with tackling climate change. The budget supports the Prime Ministers ten-point plan announced in November 2020, which aims to realise a green industrial revolution. Central to the budget is the announcement of the issue of the first sovereign green bond in summer 2021, at least £15bn in government debt will be allocated to supporting “green objectives”. A commitment to future spending on infrastructure will see the UK’s first infrastructure bank open in order to facilitate investment in green industries; beginning with a £12bn initial investment it is expected to unlock at least £40bn of private finance to support the levelling up agenda and net zero emissions. The creation of a carbon markets working group aims to position the UK as the global leading for high quality voluntary carbon offsets, with the potential of supporting new green R&D and regional development projects.

A £4.8bn ‘Levelling Up Fund’ was also announced in the spending review, with the purpose of investing in infrastructure across the UK. The fund, available to every local area is particularly directed toward high priority local projects intended to support growth in ex-industrial areas, this includes projects such as improvements to local transport infrastructure, urban regeneration projects and improvements to cultural heritage. Capacity funding will also be available to support local authorities to develop high quality bids to access the fund. Relevant to Birmingham the fund could support transport improvement projects, upgrading existing building stock and regenerating brownfield sites. Capacity funding could also be allocated to support any future bids.

### 2.2.2 Circular economy

A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems (Ellen MacArthur Foundation).

According to the Ellen MacArthur Foundation, the following three principles are the foundations of a new system:

- Design out waste and pollution.
- Keep products and materials in use.
- Regenerate natural systems.

In a traditional economy, organisations and individuals take resources, make something with them and ultimately stop using them; all of which can have significant negative effects on our environment. By implementing a circular system, Birmingham’s economy could take a regenerative approach.

The table below suggests actions the Council and city can take to further develop its circular economy:

City function	Council function & R20 workstream	Actions
<b>Built environment</b>	Planning Buildings Council strategy	Local procurement and waste management of construction materials Refurbishment Retrofitting
<b>Urban mobility</b>	Transport	Vehicle sharing EV charging with green, local waste energy
<b>Urban bio economy / Energy systems</b>	Energy supply Waste	District heat networks from waste energy Heat recovery for public infrastructure
<b>Local production system</b>	Industry	Engagement Incentives Grants Industry partnerships
<b>Circular Economy Legislation and Policies</b>	Council strategy & engagement Council behaviour change	Council / city-wide KPIs Procurement Sharing city Promotional / incentive tax
<b>Awareness, Education and Research</b>	Council strategy & engagement Council behaviour change	Citizen engagement Partnerships Digitalisation

A number of case studies exemplifying how the principles of the circular economy have been implemented in cities around the world is included in Appendix 1.

Within Birmingham and the West Midlands there are a number of circular economy initiatives. The West Midland Combined Authority (WMCA) has set up the WMCA Circular Economy Task Force to set goals and kick start the circular economy. The WMCA state that developing a circular economy in the region will create opportunities to generate economic advantage, safeguard existing jobs and generate additional employment. The Circular Economy Club for Birmingham and the West Midlands organises regular talks which discuss how to apply circular principles to reduce carbon footprint and create healthier communities.

Universities within Birmingham have also been working in partnership with government bodies and industry, in support of net zero carbon commitments and the commercial development of emerging technologies. One such partnership is the Energy Research Accelerator (ERA), a partnership including Birmingham University and Aston University which aims to put the Midlands at the centre of energy innovation. The ERA is a partnership which undertakes innovative research, exploring the barriers, challenges and opportunities



for low carbon technologies, such as creating energy from waste. The research carried out by the ERA contributes to Birmingham and the wider region's energy circular economy.

### **2.2.3 Birmingham City Council resolutions**

BCC declared a climate emergency on 11<sup>th</sup> June 2019 and made the commitment to take action to reduce the city's carbon emissions and limit the climate crisis. The ambition was set for the council and city to become net zero carbon by 2030, or as soon as possible thereafter as a 'just transition' allows to deliver the inclusive, clean growth and jobs that are needed to sustain the city's economy. This is the city's 'route to zero' (R20). On 25<sup>th</sup> June 2019 the Council's Cabinet agreed to add a new priority to the Council Plan which states that Birmingham will be "a city that takes a leading role in tackling climate change". A report on progress, including consideration of the Anthesis report, was considered by full Council in September 2020. A further update was provided to full Council in January 2021 which identified the priority R20 projects and Action Plan.

In January 2021, Cabinet endorsed the 'Investing in our Future' report which sets an ambitious 10-year vision and provides a clear roadmap on where it wants to be as an organisation and what is needed to get there.

The Council is progressing a cross-cutting corporate delivery portfolio comprising:

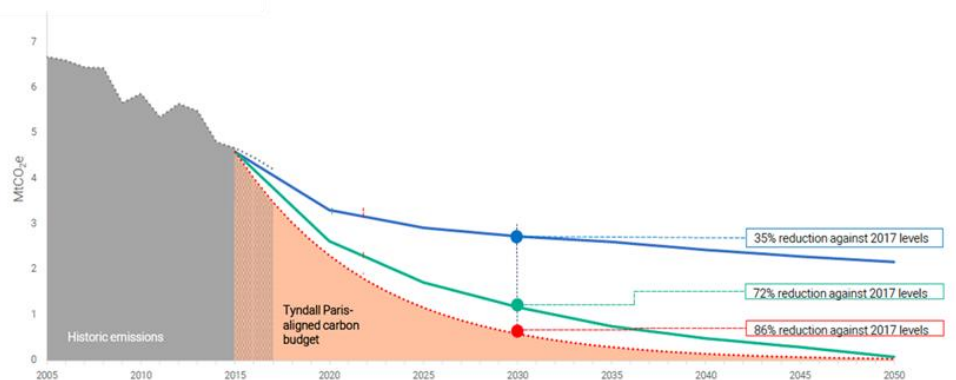
- Inclusive Growth: stimulating growth benefitting those who need it while achieving carbon goals.
- City Help & Support: shifting the emphasis from crisis to presentation.
- Organisational Structure: building trust and stimulating conversations, participation and engagement.
- Fit for Purpose Council: being enabled by a fit for purpose council.

Route to Zero (R20) is one of the key programmes within the Inclusive Growth Portfolio. An annual progress report will be presented to Council in January of each year from January 2022.

### **2.2.4 Birmingham City Council - progress to date**

Consultants Anthesis were commissioned in January 2020 to undertake a study setting out the current emissions baseline for the city and to make recommendations which could be implemented to reduce carbon emissions. Whilst progress has been made in tackling historic emissions, carbon reductions will be harder to achieve over time and will require the Council to determine how best to allocate its limited resources to optimise carbon reductions across the city.

**Figure 13: Projected climate reduction scenarios for Birmingham by Anthesis**



The Anthesis report highlights:

- Total emissions across Birmingham are 5.2m tCO<sub>2</sub>e.
- Emissions across the city, and outside the direct control of BCC, represent 92% of total emissions.
- Emissions directly relating to BCC operations represent 8% of the total emissions.
- Emissions directly relating to BCC operations that are currently in scope for action/ intervention, excluding procurement and social housing represent 1% of the total emissions.
- To stay within the Paris-aligned carbon budget a net reduction of 86% from 2017 levels would be required by 2030.
- The report further states that the carbon budget for the Birmingham City region between 2020-2100 is 27.5 MtCO<sub>2</sub>. A consistent annual emissions reduction rate of - 12.8% is needed to adhere to this budget. If Birmingham's emissions were to remain at today's levels, the finite carbon budget would run out in 7 years.

Since the declaration, progress is being made through a series of carbon-reducing activities, as reported to Council in January 2021. However, BCC recognises that there is much more to do and acknowledges that much of what is required lies outside the direct control of the council. This will require the council to use its influence and powers to tackle emissions outside its direct control to assist the city region in tackling climate change, support sustainable regeneration, social inclusion and economic growth, and to lobby externally to attract government and private sector investment and influence national strategies and policies.

### 2.2.5 Route to Zero Strategy

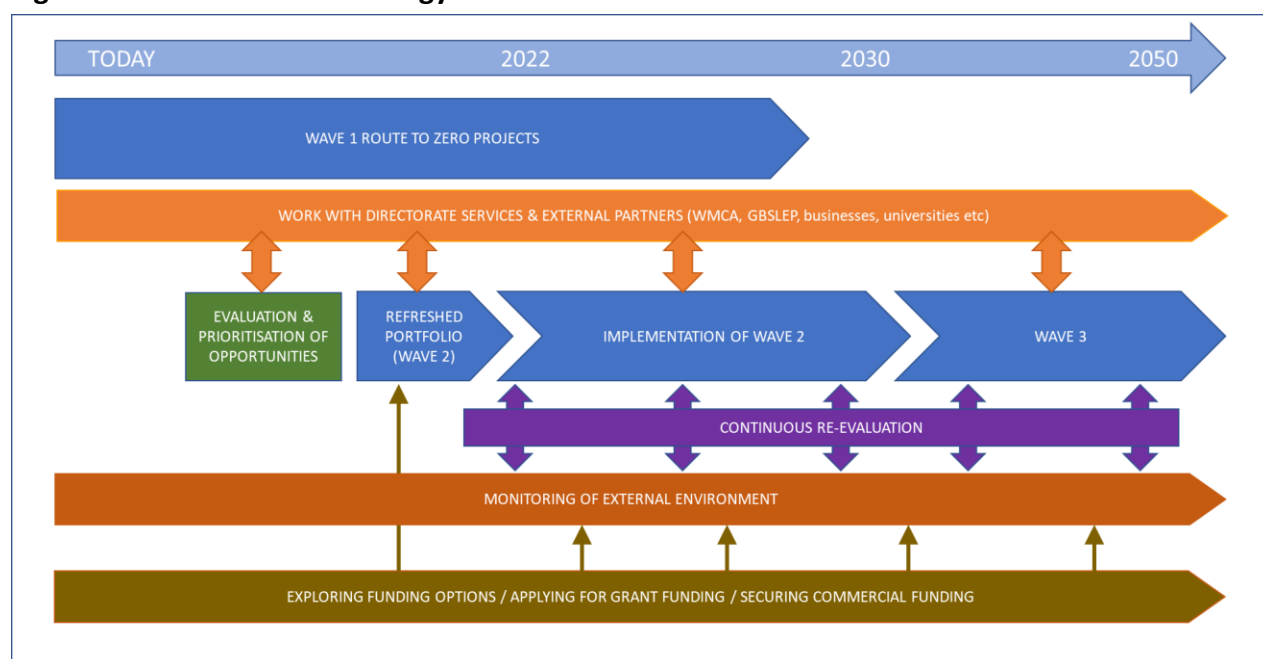
The scope for the whole of Birmingham being carbon neutral by 2030 is extremely challenging and unlikely to be achieved. Similarly, the Council's action to tackle its own emissions is tough; it will require concerted action (including consideration of carbon offsets) to be taken at scale and pace.

The strategy, which extends the Council's current approach, is for BCC to provide leadership and set an example, beginning with its own controllable emissions (1% of Birmingham's total emissions), then addressing emissions associated with other activities such as procurement/supply chain and (7%) and critically, using its influence, planning and other powers to tackle the major part of Birmingham's emissions (92%) that are outside the council's direct control. The strategy is summarised below. It is based on adopting a data-driven, structured analytical approach to determine the solutions that make biggest contribution towards carbon zero target, offer the best value for money and are technically feasible.

This will require a dedicated and experienced R20 team to:

- Provide leadership and direction to influence all BCC functions and services.
- Engage with and secure behaviour change with residents, communities, businesses.
- Work proactively with others across the city and region, including WMCA, Local Enterprise Partnerships, third sector, businesses etc.
- Lobby externally to attract government and private sector investment to the West Midlands, and Birmingham City, ensure that regional inputs are made to the development of national strategies and policies and that Birmingham is seen at the vanguard of the zero-carbon agenda.

**Figure 14: Route to Zero Strategy**



## 2.2.6 Organisational overview and need for systems change

It is recognised that to tackle the legacy of limited and slow decarbonisation efforts, and to transition to a low carbon economy, requires major and rapid system level change both

across the city and within the council itself. To date, internal operations have largely continued to favour a 'business as usual' approach. The 'business as usual' status quo needs to be addressed to achieve organisational wide buy-in and commitment and to embed decarbonisation efforts across all council activities. The scale of the change needed cannot be achieved through incremental changes. Securing change will require a strategic, long-term approach, dedicated resources and external funding to drive new ways of working, particularly incorporating more partnership working and collaborative approaches to projects.

Whilst a significant amount of work is underway (as outlined above), the Council's current internal resources are severely stretched, and work is constrained. There is currently no dedicated R20 portfolio team and there is limited coordination across the council. Section 6 (Management Case) of this Business Case sets out the proposed structure and composition of the additional capacity and capability (R20 Team) to deliver the R20 programme. This resource will sit within the Purpose, Places, Prosperity and Sustainability Directorate.

The Council has recognised that its current resources in the areas of portfolio definition and management, project definition and delivery, business case development, bid development are stretched and that resource availability is constraining the Council's ability to assemble a robust and coherent R20 portfolio and develop R20 projects to the point at which they can be delivered. The shortage of capacity has resulted in a "make do" approach and a range of high profile and competing demands on officers' time that have recently taken precedence (particularly in the context of responding to Covid-19) that results in a high risk of failing to achieve the council's R20 vision and objectives.

In order to achieve net zero carbon, both as an organisation and across the city, the City Council will need to direct significant additional resources to the R20 portfolio.

These resources will operate as a 'think and do' team, performing a critical corporate role in:

- Bringing together policy, research, emerging solutions and best practice; this will cover policy, strategy, new technology and new products and applying and adapting them for the local context.
- Shaping and developing a coherent and prioritised portfolio of investable R20 projects and plans for action/delivery.
- Commissioning BCC directorates/services and other partners (e.g. WMCA, University of Birmingham, Tyseley Energy Park) to develop and deliver defined projects.
- Positioning Birmingham as a 'testbed' / hub for climate innovation to attract inward investment and green businesses.
- Identifying and securing funding from the public and private sector.
- Continuously managing, monitoring and evaluating the R20 portfolio to ensure it remains relevant, projects are delivered, and defined outcomes and targets are achieved.

The key deliverables/outcomes BCC is seeking include:

- A coherent portfolio of carbon-reducing projects that support the R20 vision and objectives.
- Investable R20 projects that are attractive to public sector (Government, WMCA, other agencies) and private sector investors.
- Accelerated delivery of the portfolio of R20 projects.
- Income / financial return from carbon-reducing investments – financial sustainability across the portfolio.
- All areas of the council engaging with R20.
- Proactive collaboration and partnership working with partners and businesses to drive change across the city.

To grasp the opportunities outlined above, the council will need to invest in additional capacity and capability for an R20 team with the following skills sets:

- Creative minds who can identify, evaluate and shape opportunities and who are experienced in managing programme portfolios.
- Persuasive communicators and relationship managers who, for example, can lobby for and optimise partnership working and secure Government/WMCA/private sector investment in R20 opportunities.
- Commercial minds that can shape proposals, lobby and negotiate with investors.
- Subject matter experts for example in transport, housing, energy, natural environment.
- Tenacious minds who are outstanding at execution – ensuring projects are developed and delivered.

The Strategic Case is therefore based on the hypothesis that additional capacity and capabilities deployed by the City Council will:

- Identify, develop and evaluate R20 opportunities.
- Design and shape R20 opportunities.
- Develop a portfolio of investable R20 projects.
- Establish a clear roadmap to achieve net zero.
- Develop OBCs for selected R20 projects.
- Work with others to define, design and deliver projects.
- Lobby for and secure external investment.

The investment objectives and deliverables are detailed in Section 2.3.1 below.

## **2.3 Part B: The case for change**

### **2.3.1 Investment objectives**

The high-level investment objectives for the proposed R20 portfolio are as follows:

#### **Investment Objectives and deliverables**

Investment Objectives	Deliverables
A coherent portfolio of carbon-reducing projects that support the R20 vision and objectives.	<ul style="list-style-type: none"> <li>• Consideration and inventory of current in-flight initiatives and opportunities within the council and with partners aimed at reducing carbon emissions</li> <li>• Development and adoption of a portfolio management approach including portfolio prioritisation criteria</li> <li>• Identification, evaluation and prioritisation of options for addressing each source of BCC emissions</li> <li>• Development and adoption of a framework for evaluating and monitoring the carbon emissions deriving from BCC and council-wide activities/decisions</li> <li>• Definition of a suite of projects and an implementation/delivery roadmap (including initial cost estimates)</li> <li>• Development of technical reports as required and business cases for each of the selected projects</li> <li>• Ensuring all R20 portfolio projects are leveraged to deliver inclusive growth as per City Future Plan</li> </ul>
Investable R20 projects that are attractive to public sector (Government, WMCA, other agencies) and private sector investors	<ul style="list-style-type: none"> <li>• Short-term funding and other resources for the R20 portfolio for the years 2021 and 2022 to ensure progress in line with the council's expectations</li> <li>• Investable R20 project proposals including technical reports as required and business cases for each of the selected projects</li> <li>• Acting as an exemplar, leading the way in the region and nationally in reducing carbon emissions; attracting and leveraging more/earlier funding</li> </ul>
Accelerated delivery of the portfolio of R20 projects	<ul style="list-style-type: none"> <li>• Execution of the defined projects in line with timescales incorporated in project definitions</li> </ul>
Income / financial return from carbon-reducing investments – financial sustainability across the portfolio	<ul style="list-style-type: none"> <li>• Financial self-sufficiency for the portfolio in the medium term -R20 projects with the potential to generate income / financial return</li> </ul>
All areas of the council engaging with R20	<ul style="list-style-type: none"> <li>• Ensuring all relevant stakeholders are involved and/or informed throughout</li> <li>• Acting as exemplars, providing leadership and sponsorship to support behaviour change</li> <li>• Ensuring as much of this activity as possible is embedded in 'business as usual'</li> <li>• Embed R20 in everything the Council does</li> </ul>
Proactive collaboration and partnership working with partners and businesses to drive change across the city.	<ul style="list-style-type: none"> <li>• Working with a wide range of public and private sector partners to define, design and deliver R20 projects</li> <li>• Working with the WMCA and TfWM in joint lobbying to influence strategy/policy and secure funding</li> <li>• Demonstrating leadership, providing direction and acting as an exemplar in encouraging public sector partners, businesses, third sector organisations, educational institutions and individuals to take climate action.</li> </ul>

### 2.3.2 Existing arrangements

The portfolio is currently managed by the Head of Development Policy and two officers. The full extent of the contribution of further BCC staff across other directorates/departments is currently unknown and this effort is uncoordinated, taking place in the absence of a R20 portfolio strategy; with a limited understanding of the contribution that individual projects/initiatives are making to carbon reduction and the overarching carbon reduction trajectory.

A council internal working group has also been created, including representatives from a number of service areas who are working on delivering the Council's own actions and starting to look at taking forward the recommendations from the Anthesis report. The group is expanding to include individual officers working on R20 actions. Action is required to consider the remit and composition of the group to coordinate and embed R20 across council functions and service areas and ensure there is cohesive and coherent response in addressing climate issues.

In addition, Inner Circle Consulting are currently engaged to support the development of the Inclusive Growth programme and the R20 portfolio brief.

The table below summarises the existing resource arrangements within BCC. Further investment is required if BCC is to progress at scale and pace to realise its ambitions.

#### Current BCC resources involved in R20

Role	Posts	% of total time	Annual staff cost £	Annual staff cost £ pro rata
Planning & Development Team	3	10%	£211,425	£33,872 – 72,064

### 2.3.3 Business needs / Gaps between current and desired future state

This section provides a high-level summary of the threats and difficulties of existing arrangements in relation to the desired future state of the portfolio:

#### Organisation:

- There is currently no dedicated, specialist team of resources available to lead the development and delivery of the R20 portfolio across the council and city.
- The R20 portfolio team needs to play an instrumental, cross-organisational leadership function: embedding carbon saving ambitions throughout the Council's services and operations and working proactively with partners such as local authorities and WMCA to deliver shared carbon reduction ambitions and targets.

- The R20 team also has a core role to play in engaging and securing commitment from residents, communities, industry, businesses in the drive to deliver R20 ambitions and behaviour change.

**Process:**

- There is currently insufficient dedicated resource to understand BCC's current baseline and manage the end-to-end process of R20 portfolio management – from conception, through prioritisation, definition and delivery to benefits realisation and monitoring outcomes.
- BCC requires expert staff with relevant experience to develop a technologically-sound and future-proof portfolio of projects for the next 30 years.

**Financial:**

- Progress to date has been part-financed from existing council budgets this is not sustainable given the significant and ongoing pressures on council budgets and the likely level of investment required to make progress in achieving carbon reduction targets.
- Significant effort is required to lobby government, identify and target potential sources of funding and attract public and private sector investors.
- The portfolio needs to be financially self-sufficient in the medium to long term; creating positive return on investments to be reinvested in future projects.

#### **2.3.4 Proposed arrangements – Additional capacity and capability**

To grasp the opportunities outlined in this business case, The Council has determined to invest in additional capacity and capability for a dedicated R20 team, with an associated funding requirement of £1,111,150 for 2021/22 (partial year - Jan to March 2022) and 2022/23. The team will be headed by an Assistant Director (in the process of being appointed (July 2021) and not included in this funding ask) to lead and drive the development and delivery of the R20 portfolio. The Assistant Director will have a critical role to play in working across the council with the political and executive stakeholders; with partners and investors and with government as well as with programme leads within the Inclusive Growth Portfolio.

The R20 team will be responsible developing and managing the R20 portfolio (the approach is described in Section 3 Economic Case).

Details of the R20 team are described in detail in Section 6 Management Case.

#### **2.3.5 Main benefits criteria**



Investment objectives	Main benefits criteria
<b>Carbon emissions reduction</b>	<p>The overriding outcome of the R20 programme is to achieve net zero carbon emissions within the council and across the city, as soon as practicable, thereby contributing to the achievement of global and national target reductions in carbon emissions</p> <p>Reduced carbon emissions</p> <p>Reduced pollution levels</p> <p>Increased sustainable travel</p> <p>Increased public transport usage</p> <p>15-minute community concepts delivered</p>
<b>Accelerated delivery of the portfolio of R20 projects</b>	<p>Execution of defined projects to demonstrate progress in achieving carbon reduction outcomes</p> <p>Delivery of early pathfinders/pilots and potential for scaling</p>
<b>Establishing a financially self-sustaining portfolio of R20 projects in the medium term</b>	<p>Increased value of government and private sector investment secured</p> <p>Financial returns e.g. cost effectiveness through £ saved by tonne of carbon equivalent and opportunities to generate income or reduce costs. For example: Retrofit, District Energy Scheme, Electric Vehicle Charging Infrastructure, Procurement and Low Emission Buses.</p>
<b>All delivery activity across the council and with partners leveraged to embed carbon reduction</b>	<p>Improved coordination and delivery</p> <p>Reduced carbon emissions</p>
<b>Proactive collaboration and partnership working with partners and businesses to drive change across the city.</b>	<p>Enhanced ability to influence strategy/policy and secure funding</p> <p>Demonstrating leadership, acting as an exemplar in encouraging public sector partners, businesses, third sector organisations, educational institutions and individuals to take climate action and reduce carbon emissions across the region</p> <p>Enhanced reputation for the city of through taking a leading role in carbon reduction</p>
<b>Contribution to other Inclusive Growth objectives and outcomes</b>	<p>Healthier citizens, with longer life expectancy</p> <p>Increased prosperity for citizens and the city as a whole, e.g. green jobs creation and local green economy boost</p> <p>Increased employment in the green sector</p> <p>Reduction in the impact of climate change, e.g. fewer heatwaves, floods</p>

Meeting the potential scope for additional investment in delivery capacity and capability should deliver a range of high level strategic and operational benefits and contribute to BCC's strategic outcomes. These are set out in the table below:

### Investment objectives and benefits criteria

### 2.3.6 Main risks

The main business and service risks associated with the potential scope together with their counter measures are discussed in Section 6 (Management Case) and within the risk register in Appendix 5.

### 2.3.7 Constraints

The project is subject to the following constraints:

- Scope: BCC is committed to reducing its own emissions across all areas of operations by 2030. However, only 8% of the total emissions of the city are under the control/influence of the council.
- Financial: budget availability for the project; budget availability to invest in and scale up early pathfinder/delivery projects.
- Resources: availability of sufficient skilled and experienced support to develop and deliver the R20 portfolio.
- Timescales: arrangements for additional resource capacity and capability should be implemented as soon as possible to progress development of the R20 portfolio.
- Legal/constitutional: policies and regulations relating to significant areas of focus (e.g. transport, planning) are determined and set outside BCC.

### 2.3.8 Dependencies

The project is subject to the following dependencies that will be carefully monitored and managed throughout the lifespan of the portfolio:

- This project will be informed by, and will inform other change projects/programmes being conducted within BCC including:
  - Housing Review
  - Our Future City Plan/Vision 2040
  - Birmingham Transport Plan, Birmingham Emergency Transport Plan
  - East Birmingham Delivery
  - Perry Barr Delivery
  - Enterprise Zone and Curzon Delivery
  - Industrial Strategy and Business Resilience
  - New ways of working

- 
- This project will be informed by national legislation and funding and regional transformation/delivery programmes outside the immediate sphere of influence of BCC including:
    - Central government – legislation, funding
    - West Midlands Combined Authority and associated agencies (for example Transport for West Midlands)
    - Businesses across Birmingham

---

## 3 The Economic Case

### 3.1 The Journey to Route to Zero

Achieving net zero will require significant investment. At a national level the National Audit Office has highlighted the enormous scale of the challenge and the cross-government coordination required to achieve net zero, estimating the investment needed at ‘hundreds of billions’ to tackle the unprecedented changes to the way electricity is generated, how people travel, how land is used, how buildings are heated, how to build appropriate flood defences and how to deal with the health impacts of global warming. The Climate Change Committee estimated in December 2020 that UK investment in low carbon must scale up to £50 billion each year from 2030 to 2050 to deliver net zero.

Both the NAO and the Climate Commission have signalled that a major strengthening of UK policies and a major nationwide investment programme are required, led by Government but also funded by private companies and individuals. The Government’s Ten Point Plan for a Green Industrial Revolution issued in November 2020, (as described in the Strategic Case Section 2.2.1) illustrates some of the major investment areas that are a good fit with Birmingham’s net zero carbon ambitions.

At a local level the costs of achieving net zero are highly uncertain, although it is clear that there are a series of long-term R20 projects requiring significant investment. The Council will need to play a critical role in attracting and securing investment to progress its net zero carbon ambitions. BCC recognises that additional public and private sector investment funding streams will need to be nurtured, developed and secured in order to create a financially self-sufficient R20 portfolio. For example, retrofitting Birmingham’s housing stock (circa. 61,000 homes); is estimated to be between £25,000 to £45,000 per home to EPC ‘C’/‘B’, or up to £2.5 bn in total. The Council is acting to trial work on retrofitting in testing new technologies and the effectiveness of energy solutions to inform its spending decisions recognising that this is an issue that cannot be tackled one house or flat at a time but one that needs a coordinated, area-based renewal programme involving both the public and private sectors, using the expertise and enterprise of the market alongside community-based assets.

### 3.2 The Role of the Council

Within this context and recognising that the Council has finite resources at its disposal and faces many more years of fiscal restraint following Covid-19, the role of the Council in delivering its net zero ambition and a financially self-sustaining R20 portfolio is to:

- Provide strategic leadership and direction to shape the Council’s strategic plans and the R20 portfolio over the next 30 years to get Birmingham to net zero.

- Facilitate the definition and delivery of projects to reduce carbon emissions (a) within the direct control of the Council (circa. 1%<sup>6</sup> of the city's emissions), (b) with its suppliers (circa 7%), using the levers available to it and (c) outside the direct control of the Council, stimulating and influencing action across the city (92%).
- Lobby externally to (a) attract public and private sector investment to the West Midlands, and Birmingham City region, (b) ensure that regional inputs are made to the development of national strategies and policies and (c) position Birmingham at the vanguard of the zero-carbon agenda.
- Secure funding and other resources to proactively accelerate the pace and scale of R20 projects delivery.
- Engage citizens in understanding what is needed and why, enabling them to be involved in decision making and securing behaviour change in making low carbon choices.

These are expanded in the table below:

Council's Role	Realised by:
Strategic leadership and direction	<ul style="list-style-type: none"> <li>• Having strong political and executive leadership</li> <li>• Having a clear long-term vision, with achievable medium-term objectives</li> <li>• Positioning Birmingham as a place with the ideas, energy and commitment to progress R20 solutions</li> <li>• Championing Birmingham as an attractive investment location for R20 solutions</li> <li>• Taking a proactive and interventionist role to achieve R20, inclusive growth and financial objectives</li> <li>• Leading by example in the city and demonstrating the benefits of decarbonisation to other stakeholders</li> </ul>
Defining and delivering R20 Projects (a) within the direct control of the Council (b) with its suppliers (c) outside the direct control of the Council	<ul style="list-style-type: none"> <li>• Adopting the strategic framework in maintaining a R20 portfolio; select projects that make the biggest contribution towards carbon zero target, offer the best value for money and are technically feasible</li> <li>• Working proactively with others across the city and region, including WMCA, Local Enterprise Partnerships, universities, third sector, businesses</li> <li>• Securing additional capacity and capability to deliver and remove resource constraints on the pace and scale of delivery</li> </ul>
Lobbying externally	<ul style="list-style-type: none"> <li>• Promoting regional inputs to the development of national strategies and policies</li> <li>• Positioning Birmingham as a pathfinder partner in delivering Government policy and objectives</li> <li>• Attracting public and private sector investment to the West Midlands, and Birmingham City</li> <li>• Leveraging existing partnerships to ensure the delivery of multiple benefits from interventions</li> </ul>

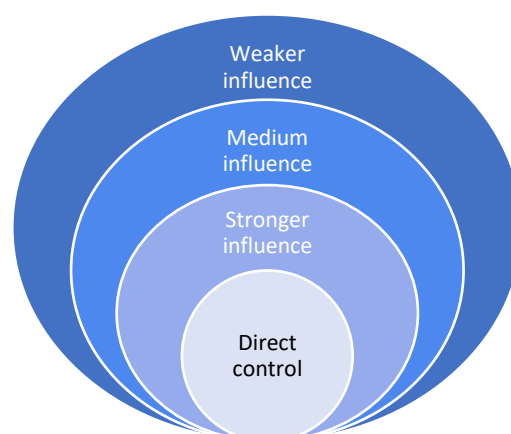
<sup>6</sup> Percentages reported in the Carbon Emission Reduction Study by Anthesis June 2020 report to Birmingham City Council

	<ul style="list-style-type: none"> <li>Stimulating interest from the private sector</li> <li>Partnering with businesses to support their carbon reduction actions</li> </ul>
Secure funding and other resources	<ul style="list-style-type: none"> <li>Exploiting the full potential of available public sector funds</li> <li>Building new and strengthening existing relationships with investors</li> <li>Making and/or promoting strategic investment decisions to facilitate the delivery of R20 projects</li> <li>Proactively seeking commercialisation opportunities</li> </ul>
Communication, engagement and behaviour change	<ul style="list-style-type: none"> <li>Acting as a key information source for climate change action in the city</li> <li>Establishing good communication channels to promote information about the need to act, what can be done and options available</li> <li>Enabling citizen engagement in decision making</li> </ul>

As described in the Executive Summary (Section 1.3.2) the role of the Council is to take direct action to address its own emissions (accounting for just 1% of the city's total annual CO<sub>2</sub> emissions) and also to show leadership and use its influence with a wide range of stakeholders to stimulate action across the city. The figure below illustrates this role and realm of influence:

**Figure 15: BCC's Role in tackling carbon emissions**

Influence	Description
<b>Direct Control</b>	Emissions sources are directly owned or operationally controlled by the Council, such as council buildings or council fleet.
<b>Stronger</b>	Owners and operators of emissions sources are clearly defined but are not directly operated by the Council. For example, emissions related to commercially leased buildings that the council owns but does not operate.
<b>Medium</b>	Emissions sources do not relate to council owned or operated assets, procurement or council led activities, however some convening power may exist with specific actors in the city, such as major businesses within city boundaries.
<b>Weaker</b>	Owners and operators of emissions sources are not clearly defined, influence limited to lobbying central government or trade associations. For example, national planning policy limited the extent of improvement to new build energy efficiency.

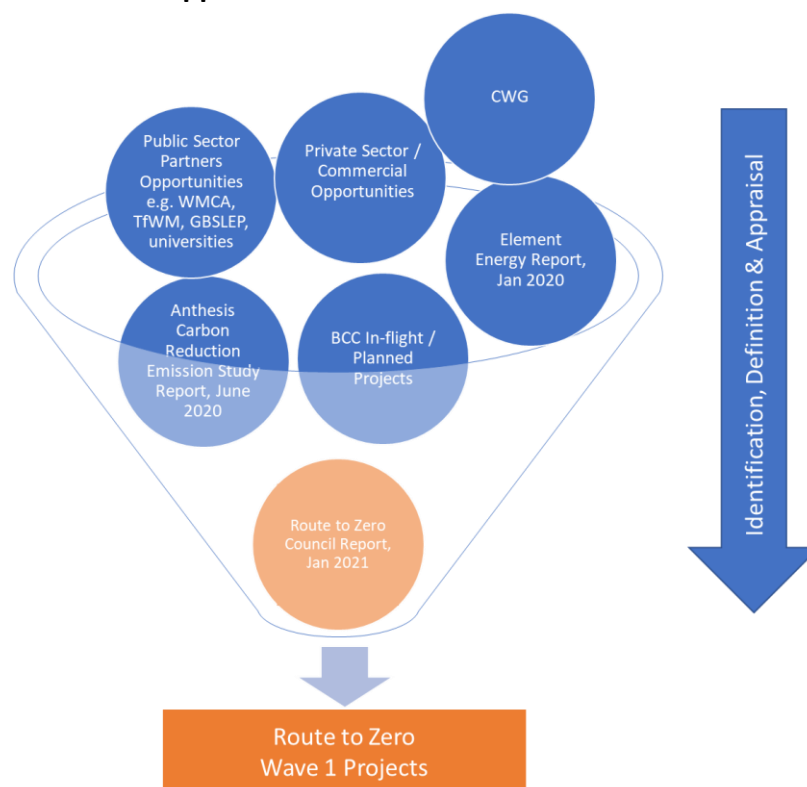


### 3.3 Route to Zero Portfolio

The R20 Programme is charged with developing a coherent portfolio of carbon-reducing projects and a delivery roadmap that supports the council's ambition to become carbon neutral. The Council does not have the resources to deliver all R20 opportunities/projects, it will therefore need to prioritise those it pursues using a structured, evidence-based approach to identify those that deliver the greatest contribution. This may mean re-prioritising some existing projects.

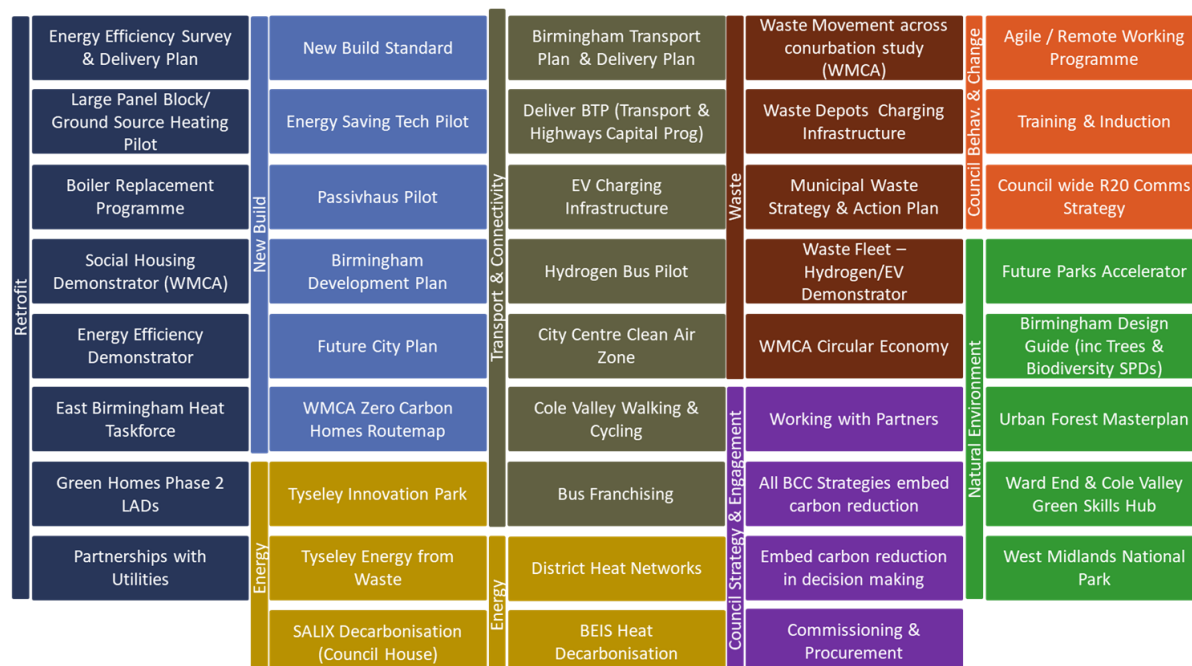
The long list pipeline of R20 opportunities and projects includes a series of actions that the Council could undertake over the coming two decades to achieve carbon neutrality for the city identified within the Carbon Emission Reduction Study by Anthesis, June 2020 the Element Energy Report, January 2020, the R20 Report to Council in January 2021 and current Council in-flight and planned projects that have the potential to contribute to carbon reduction. It also includes opportunities emerging through the work of Birmingham's R20 Taskforce, Government initiatives, and through partners across Birmingham including WMCA, TfWM, GBSLEP, universities and businesses.

**Figure 16: Pipeline of R20 Opportunities**



The Council has determined that the Route to Zero Wave 1 projects will focus on the priority actions and projects identified in the report to Council in January 2021 alongside a number of in-flight and planned projects that have the potential to contribute to carbon reduction. These are summarised in the figure below.

**Figure 17: Route to Zero Wave 1 Projects**



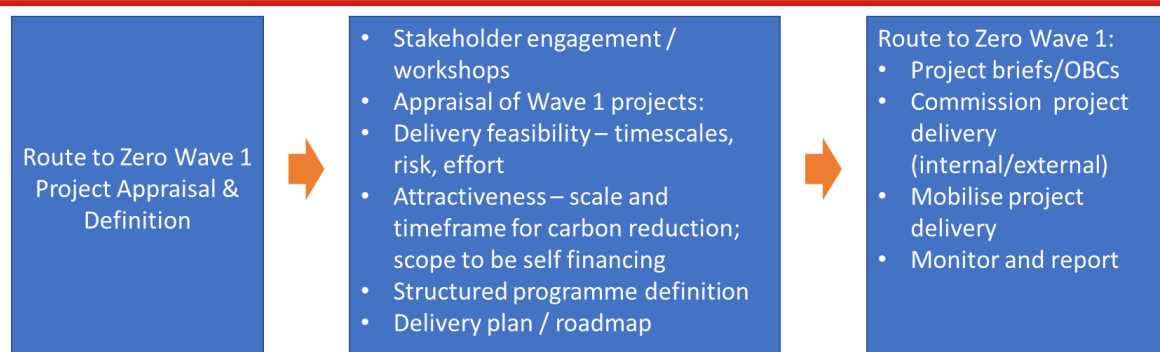
Note: The R20 Programme is currently supporting delivery of the suite of Route to Zero Wave 1 projects. There is likely to be some adjustment to the constituent projects, any changes will be consistent with the priority action plan reported to Council in January 2021 and will be agreed with the R20 Programme SRO.

### 3.4 Route to Zero Portfolio - Wave 1 Projects

The Route to Zero Wave 1 projects have been evaluated through a structured, evidence-based appraisal to determine the veracity of their delivery plans, their attractiveness in terms of their potential contribution to net zero carbon and other Inclusive Growth outcomes in support of a just transition and a high-level economic appraisal. This is summarised in the figure below; it provides a strategic appraisal framework for the development of subsequent waves of R20 projects.

**Figure 18: Appraisal and Definition of Route to Zero Wave 1 Projects**





Each of the Wave 1 project opportunities has been scrutinised based on:

- **Feasibility:** How feasible the delivery of the project is, including matters such as costs, availability of funding, delivery timeframe, implementation considerations.
- **Attractiveness:** How attractive the project is, from the points of view of alignment with the Council's strategic objectives, contribution to net zero carbon, costs to achieve carbon reduction, and other growth benefits such as economic, health and wellbeing etc.

This is illustrated in the table below along with the weighting attached to each Feasibility and Attractiveness criteria which has enabled each of the opportunities to be scored and mapped as shown in the table below and shows those projects that have both high attractiveness and high feasibility and those which should be reviewed and updated in the light of evolving information and developments as the portfolio is reviewed and refreshed.

For those projects that have no associated carbon savings the attractiveness score weighting is adjusted as indicated in brackets.

Category	Criteria	Description	Weight
<b>Feasibility</b>	<b>Cost</b>	Total cost of the project over its lifetime.	<b>25%</b>
	<b>Funding status</b>	Status of securing funding if required	<b>25%</b>
	<b>Delivery time</b>	Total duration of the project from initiation and planning to implementation and monitoring.	<b>25%</b>
	<b>Ease of implementation</b>	The degree of difficulty and rate of success of the project. This indicator assesses the following: - Number on key external stakeholders - Dependency on external stakeholders - Skill, capacity & competency availability - Experience with subject matter & complexity	<b>25%</b>
<b>Attractiveness</b>	<b>Strategic fit</b>	Strategic fit expresses the degree to which BCC's corporate priorities are matching an opportunity's objectives & projected outcomes.	<b>12.5% (20%)</b>
	<b>Cost £ / tCO<sub>2</sub>e saved</b>	Estimated cost per tonne of carbon emissions saved	<b>12.5% (0%)</b>

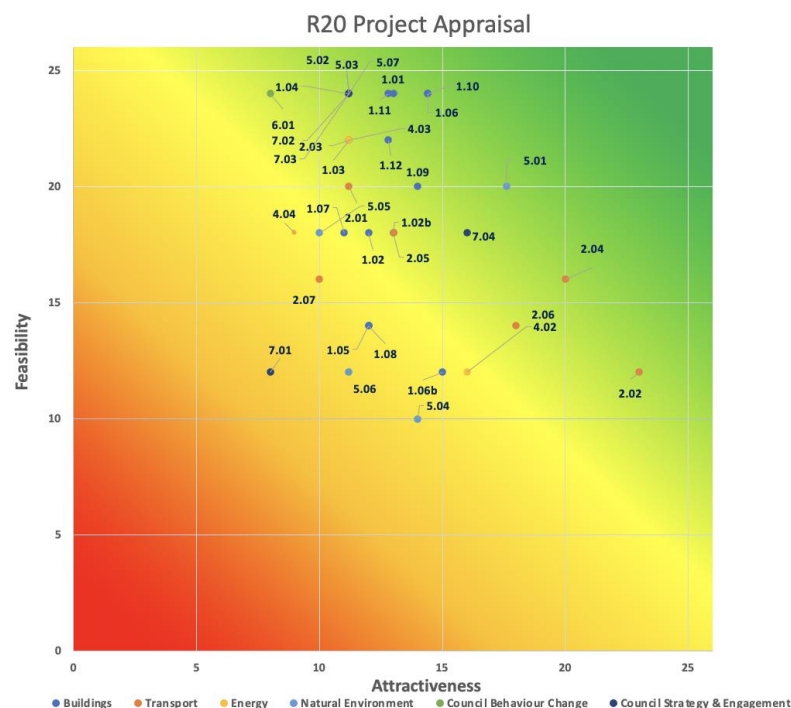
	<b>Total Carbon Reduction tCO<sub>2</sub>e pa</b>	Net Change in Carbon Emissions (tCO <sub>2</sub> e) – tonnes of Carbon emissions reduced or avoided	<b>12.5%</b> (0%)
	<b>City-wide Net Zero Contribution</b>	A measure of the amount of BCC's carbon emissions remaining in this category after project completion (annualised)	<b>12.5%</b> (0%)
	<b>Health benefits</b>	<ul style="list-style-type: none"> <li>- Air quality</li> <li>- Increased use of active modes of travel</li> <li>- Decreased fuel poverty</li> <li>- Mental health</li> <li>- Physical health</li> </ul>	<b>12.5%</b> (20%)
	<b>Economic benefits</b>	<ul style="list-style-type: none"> <li>- Skills</li> <li>- Money made or saved</li> <li>- Supports green industry growth</li> <li>- Jobs created</li> </ul>	<b>12.5%</b> (20%)
	<b>Equity benefits</b>	<ul style="list-style-type: none"> <li>- Life</li> <li>- Health</li> <li>- Physical security</li> <li>- Legal security</li> <li>- Education and learning</li> <li>- Standard of living</li> <li>- Productive and valued activities</li> <li>- Individual, family and social life</li> <li>- Identity, expression and self-respect</li> <li>- Participation, influence and voice</li> </ul>	<b>12.5%</b> (20%)
	<b>Resilience benefits</b>	<ul style="list-style-type: none"> <li>- Health and wellbeing - Systems that ensure the health and wellbeing of people living and working in the city.</li> <li>- Economy and society - The social and financial systems that enable urban populations to live peacefully, and act collectively.</li> <li>- Infrastructure and Environment - Built and natural systems that provide critical services, protect and connect urban citizens.</li> <li>- Leadership and strategy - The need for informed, inclusive, integrated and iterative decision making in our cities.</li> </ul>	<b>12.5%</b> (20%)

The initial suite of Route to Zero Wave 1 projects is summarised below. Fully developed and implemented they have the potential to make a contribution of 80,778 tCO<sub>2</sub> emissions savings in 2021 (1.8%) to BCC's carbon zero ambitions. The suite of Route to Zero Wave 1 projects as set out in the interim report to the Internal Working Group in February 2021 comprises:

- A mix of projects that will:
  - Provide strategic policy direction for facilitating and influencing action across the city (e.g. Birmingham Development Plan).
  - Embed consideration of carbon reduction in the Council's activities (e.g. incorporating consideration of carbon reduction into the Council's decision making).
  - Deliver carbon emissions reductions (e.g. Passivhaus pilot, Heat Networks, Hydrogen Bus pilot).

- 
- A balance of existing, in-flight projects, projects are ready for implementation and that need to be mobilised and get underway, and projects that are not yet fully defined and where further work is required to develop outline business cases. For example, the appraisal of Route to Zero Wave 1 projects indicates that a number of key contributing projects such as retrofit, district heat networks, energy from waste and zero emissions vehicles are at an early stage of development and further work is required to build fuller business cases and develop investable propositions over the next 6-12 months.
  - A combination of projects at different points in their development lifecycle:
    - Project Initiation: Defining the opportunity, purpose, scope, potential solution(s) and benefits. Creating the strategic outline business case for securing support and resources for further detailed development work.
    - Solution Design: Undertaking detailed design, feasibility and options appraisal work. Creating fuller Business Cases and initial plans for implementation phasing. Securing commitments and resources needed to move to implementation.
    - Implementation readiness: Completing the detailed planning needed to implement the preferred solution(s). Dedicated implementation teams established – including commissioning of delivery partners. Consultation exercises and necessary approvals, including planning permissions. Phased roll-out, including use of shovel ready pathfinders to learn from and create investor/community confidence.
    - Live delivery: The projects and schemes within the projects that are assessed as being delivery ready or “shovel ready”, and where implementation activity is either underway or ready to commence.
  - A combination of short-, medium- and longer-term projects.
  - A mixture of pathfinder/pilot/demonstrator projects to secure support and demonstrate commitment and an ability to deliver, as well as longer term strategic and major infrastructure projects.
  - An approach which is based on co-design and co-delivery with a range of public and private sector delivery partners (e.g. Government, Homes England and key local businesses).

**Figure 19 Route to Zero Wave 1 Projects Mapping**



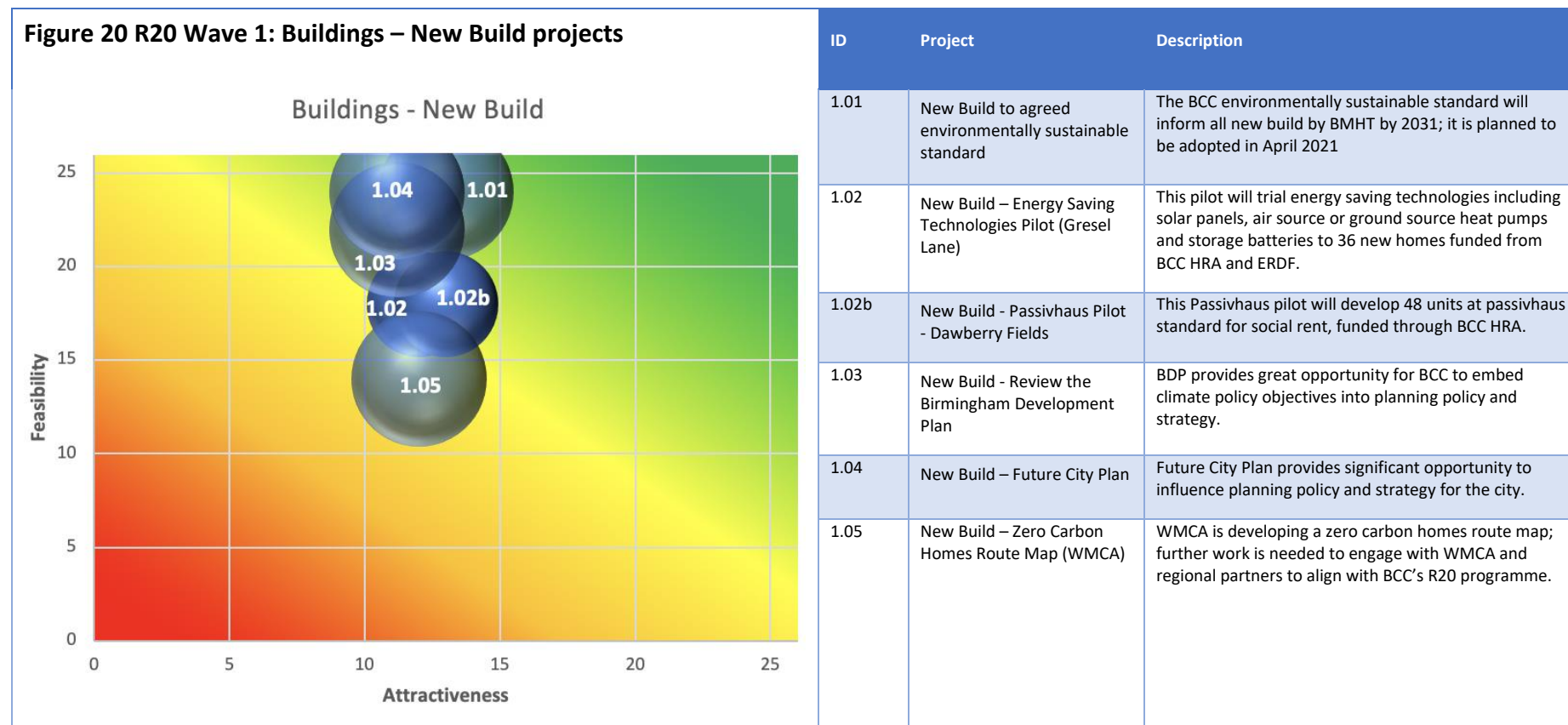
The project heatmap provides a way for the Council to visually identify a prioritisation pathway for R20 projects; green zone projects are ranked highly and should be prioritised; yellow zone, less attractive but with potential and which require further development work; and amber & red zone for less attractive projects.

The R20 Wave 1 projects are shown by theme below.

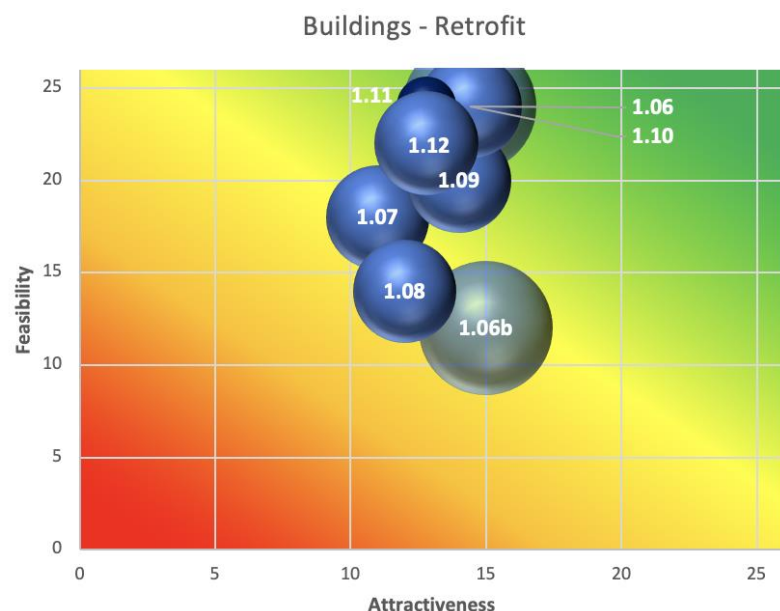
ID	Project name	ID	Project name
1.01	New Build to agreed environmentally sustainable standard	2.06	City Centre Clean Air Zone (CAZ)
1.02	New Build – Energy Saving Technologies Pilot (Gresel Lane)	2.07	Cole Valley Walking & Cycling
1.02b	New Build - Passivhaus Pilot - Dawberry Fields	4.01	Tyseley Energy Innovation Park <i>Currently limited data available</i>
1.03	New Build - Review the Birmingham Development Plan	4.01a	Tyseley Waste Incinerator upgrade & replacement <i>Currently limited data available</i>
1.04	New Build – Future City Plan	4.02	District Heat Networks Energy Centres
1.05	New Build – Zero Carbon Homes Route Map (WMCA)	4.03	BEIS Heat Decarbonisation Study
1.06	Housing Retrofit – Thermal Impact / Energy Efficiency Survey and Delivery Plan	4.04	SALIX Public Sector Decarbonisation (Council House)
1.06b	Housing Retrofit – Implementation of city-wide retrofit plan	5.01	Future Parks Accelerator Project
1.07	Housing Retrofit – Large Panel Block (LPS) Retrofit and Ground Source Heating Pilot	5.02	Trees Supplementary Planning document
1.08	Housing Retrofit – Phase 2 Green Homes LADs funding	5.03	Biodiversity Supplementary Planning document
1.09	Housing Retrofit – Boiler Replacement Programme	5.04	Urban Forest Masterplan
1.10	Housing Retrofit – Promote/educate all key stakeholders	5.05	Ward End and Cole Valley Green Skills Hub
1.11	Housing Retrofit – East Birmingham Heat Taskforce – produce retrofit & decarbonisation Outline Business Case	5.06	WM National Park Concept
1.12	Housing Retrofit – Partnerships with Utilities	5.07	Design Guide SPD
2.01	Birmingham Transport Plan & Delivery Plan	6.01	Agile / Remote Working
2.02	Delivering the BTP (Transport & Highways Capital Programme THCP)	7.01	Working with Partners
2.03	Bus franchising (led by TfWM)	7.02	Update all Strategies/Policies to embed carbon reduction
2.04	EV Charging Points	7.03	Embed carbon reduction in decision making
2.05	Hydrogen Bus Pilot	7.04	Council Commissioning & Procurement

### 3.4.1 Buildings

**Figure 20 R20 Wave 1: Buildings – New Build projects**



**Figure 21 R20 Wave 1: Buildings – Retrofit projects**



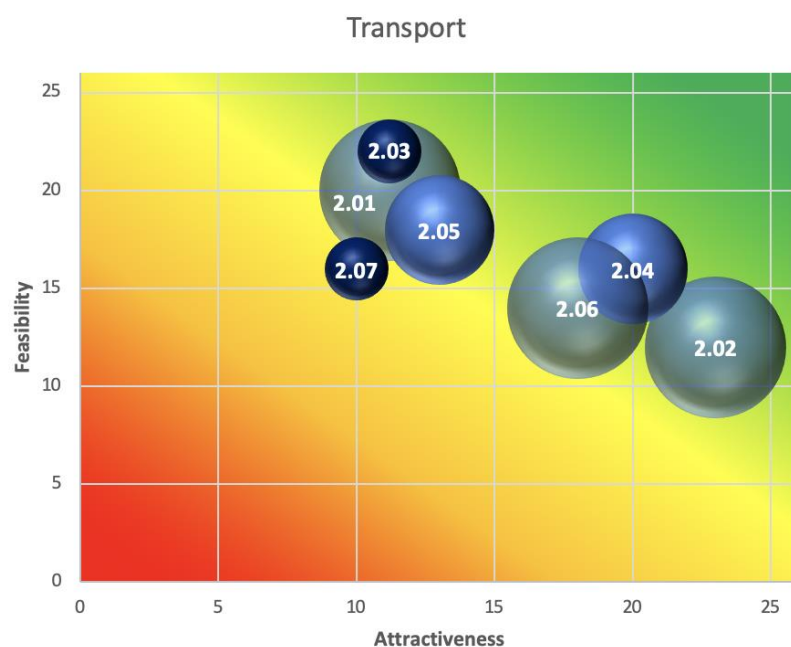
ID	Project	Description
1.06	Housing Retrofit – Thermal Impact / Energy Efficiency Survey and Delivery Plan	The thermal impact / energy efficiency survey can be delivered by Acivico/Panacea within circa 2 months, at no charge to BCC and will highlight options for developing a city-wide plan.
1.06b	Housing Retrofit – Implementation of city-wide retrofit plan	The city-wide retrofit plan is an ambitious undertaking which has the potential to realise significant energy efficiency gains within BCC housing stock, contributing to reduced carbon emissions.
1.07	Housing Retrofit – Large Panel Block (LPS) Retrofit and Ground Source Heating Pilot	Birmingham has the largest stock of LPS blocks outside of London. This pilot will undertake a holistic retrofit programme for an LPS block implementing a number of interventions, including window replacement, upgrading M&E services and replacing white goods, and explore opportunities for ground source heating. A cost- benefit analysis will inform the potential for a wider programme across the city.
1.08	Housing Retrofit – Phase 2 Green Homes LADs funding	The Government has allocated £6.29m to Birmingham for LADs phase 2, in order to support retrofit of existing housing stock in the city. 500 homes have been identified across 5 target areas where contractors can be swiftly mobilised. 67% of funding has to be allocated and spent by September 2021, 100% by December 2021.
1.09	Housing Retrofit – Boiler Replacement Programme	The programme continues work by BCC replacing inefficient boilers with A rated boilers across BCC stock. The works will improve the efficiency of homes across BCC housing stock. The 2021-22 programme will target replacement of 1,000 boilers at a cost of £4m.
1.10	Housing Retrofit – Promote/educate all key stakeholders	All refurbishment programmes include engagement and education for tenants; there is potential to develop a coordinated promotion and education campaign to influence behaviour
1.11	Housing Retrofit – East Birmingham Heat Taskforce – produce retrofit & decarbonisation Outline Business Case	There is potential to make East Birmingham a pioneer/epicentre for retrofit and heat decarbonisation. Exploratory discussions are taking place with Bourneville Village Trust for a retrofit pilot.



	1.12	Housing Retrofit – Partnerships with Utilities	BCC is engaging with utilities, including Agility Eco to make best use of ECO funding to help low-income and vulnerable households install energy saving improvements to their homes.
--	------	--	---

### 3.4.2 Transport

**Figure 22 R20 Wave 1: Transport projects**

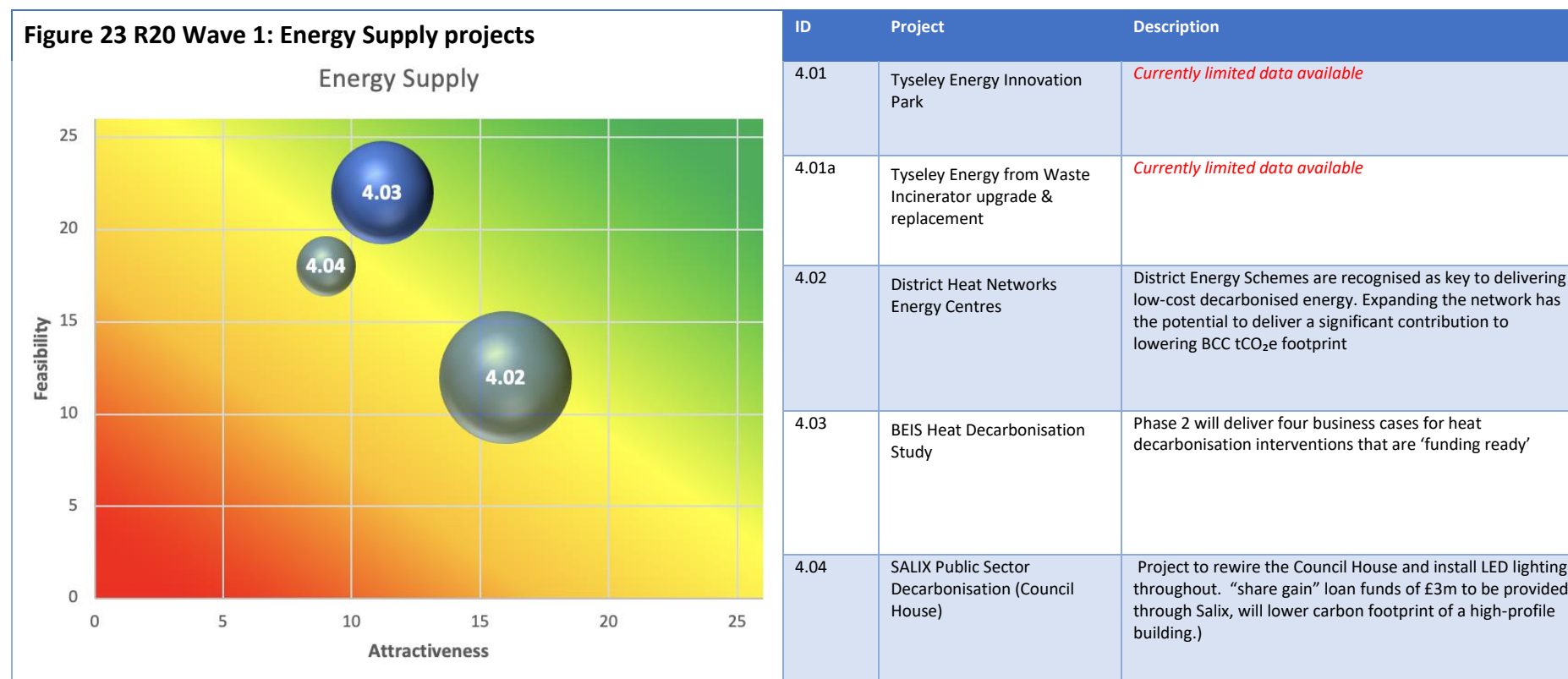


ID	Project	Description
2.01	Birmingham Transport Plan & Delivery Plan	The Birmingham Transport Plan sets the principles for transport policies and schemes for the period up to 2031. It sets out four 'big moves' that will guide future action to deliver a sustainable, green, inclusive, go-anywhere network.
2.02	Delivering the BTP (Transport & Highways Capital Programme THCP)	The THCP performs an essential role in supporting a range of projects that contribute towards achieving the Council's key policies and priorities. It is delivered and monitored on an annual basis and comprises eight programmes and covering a six-year period. Upon completion, the THCP is estimated to deliver a 10% reduction of annual city-wide emissions.
2.03	Bus franchising (led by TfWM)	TfWM are preparing an Outline Business Case (OBC) to assess whether pursuing a Franchising scheme would deliver upon the West Midlands Vision for Buses. Requires further scoping work and engagement with TfWM.
2.04	EV Charging Points	BCC appointed ESB Ltd as their development partner to implement a city-wide EV charging network of 394 chargers over 7 years. If scaled up, BCC could play a key enabling role for residents and taxis to transition to low-emission vehicles.
2.05	Hydrogen Bus Pilot	BCC has purchased 20 new hydrogen double decker buses as part of their Clean Air Hydrogen Bus Pilot. It is intended to be the first step of a larger programme to replace diesel stock with zero emission buses. If scaled up, it could have a significant impact on transport-related emissions.
2.06	City Centre Clean Air Zone (CAZ)	Birmingham's CAZ, to be implemented in Summer 2021, is set to reduce air pollution and carbon emissions in the city centre by discouraging the most polluting vehicles from entering the zone through penalties. Revenues generated from penalty fees will provide funding for other BTP schemes.
2.07	Cole Valley Walking & Cycling	A programme delivering blue and green infrastructure improvement interventions in the Tyseley area of the River Cole Valley. It aims to increase biodiversity, economic and community activity. Requires further scoping work and data capture relating to carbon emissions.

### 3.4.3 Waste

There is currently no data available for projects in this workstream.

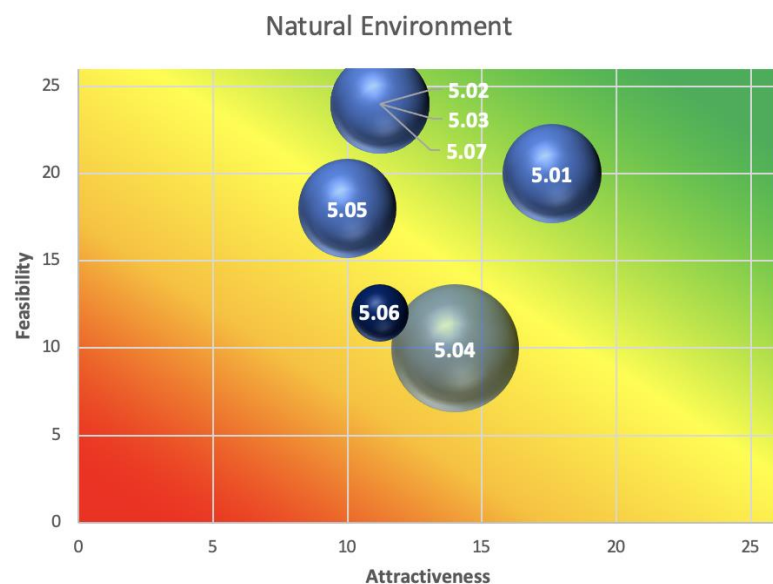
### 3.4.4 Energy Supply





### 3.4.5 Natural Environment

**Figure 24 R20 Wave 1: Natural Environment projects**

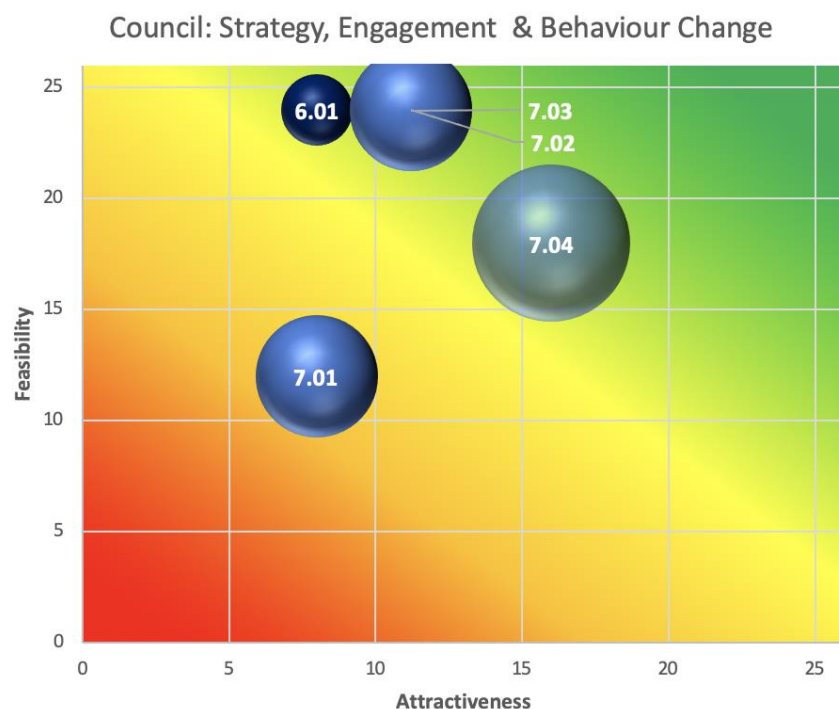


ID	Project	Description
5.01	Future Parks Accelerator Project	A council wide transformation programme with the aim of putting the natural environment at the centre of decision making and policy setting. Four frameworks are promoted to establish a new governance model; environmental justice, healthy city, sustainable finance and citizen involvement. A number of implementation milestones and pilots have been identified within each framework.
5.02	Trees Supplementary Planning document	The SPD will be subsumed into the Birmingham Development Plan, providing best practice guidance related to trees during the planning process.
5.03	Biodiversity Supplementary Planning document	The SPD will be subsumed into the Birmingham Development Plan, providing best practice guidance related to biodiversity during the planning process.
5.04	Urban Forest Masterplan	The Urban Forest Masterplan presents a long-term vision which aims to increase Birmingham's existing stock of natural capital assets and encourage good management, resilience and diversity. With a key goal of increasing the canopy coverages to 25%, the masterplan will support the city's ability to combat urban heat islands, manage water stocks and improve rates of carbon sequestration. The masterplan will identify a time-bound action plan and KPI's. The first consultation is being held in March 2021.
5.05	Ward End and Cole Valley Green Skills Hub	Part of the wider Ward End and Cole Valley masterplan, the proposed green skills hub will consist of training and community facilities in existing facilities. The programme will expand skills and training opportunities, encompassing sector specific pathways, including digital and low carbon.
5.06	WM National Park Concept	Led by WMCA and Birmingham University, the WM National Park concept is in early stages of conception. The concept forms part of the West Midlands zero-carbon strategy and is seen as a key component of the region's green economic recovery.
5.07	Design Guide SPD	The SPD provides guidance during the planning process, promoting best design practice in the built environment. The SPD includes guidance on green infrastructure, promoting biophilic design, biodiversity, urban greening and

increasing tree canopy. In addition to guidance on sustainably buildings and energy efficiency.

### 3.4.6 Council Strategy, Engagement and Behaviour Change

**Figure 25 R20 Wave 1: Council Strategy, Engagement and Behaviour projects**



### 3.5 Wave 1 Projects: Carbon Savings

Based on the available data, the table below summarises the contribution the Wave 1 projects in each thematic area are estimated to make to the Council's net zero carbon target in 2021/22.

Theme	Baseline Carbon Emissions (t)		2021/22 Carbon Emission Reductions (t)	
	Council	City-wide	Council	City-wide
<b>Estimated Annual CO<sub>2</sub> Baseline 2019</b>	<b>417,772</b>	<b>4,578,000</b>	<i>n/a</i>	<i>n/a</i>
<b>1) Buildings – Retrofit</b> Large Panel Block Retrofit and Ground Source Heating Pilot Phase 2 Green Homes LADs funding (500 homes) Boiler Replacement Programme (1,000 units)	7,339	3,129,000	2,224 -0.5%	2,224 -0.04%
<b>2) Transport</b> Through delivery of BTP projects in the Transport and Highways Capital Programme in 2021/22	1,191	1,264,000	<i>n/a</i>	51,105 -1.1%
<b>3) Waste</b> Ongoing projects including reconfiguration of household recycling and negotiation of energy from waste contract will deliver carbon savings, but data is not available at this time.	<i>n/a</i>	71,000	<i>Data not available</i>	<i>Data not available</i>
<b>4) Energy Supply</b> Council House LED carbon savings expected but not yet available. Heat network decarbonisation awaiting BEIS recommendations to support creation of business case.	<i>Included within themes 1, 3 and 6</i>	<i>Included within themes 1, 3 and 6</i>	<i>Data not available</i>	<i>Data not available</i>
<b>5) Natural Environment</b> 2021/22 savings through Urban Forest Masterplan with year-on-year incremental increase	<i>n/a</i>	-4,700 (CO <sub>2</sub> sequestration)	<i>n/a</i>	96 -0%
<b>6) Council: Strategy, Engagement &amp; Behaviour Change</b> Green electric for Council properties Through agile/remote working programme	334,861 7,831	<i>n/a</i>	28,597 -6.8%	28,597 -0.6%
<b>Subtotal Annual CO<sub>2</sub> Emissions</b> Council savings: 30,821t City-wide savings: 82,022t			<b>386,951</b> 92.6%	<b>4,495,978</b> 98.2%
<b>New Build</b> Carbon avoided from - Passivhaus Pilot – Dawberry Fields (48 units) - 2,850 units to agreed environmentally sustainable standard - Energy saving technologies pilot at Gresel Lane (36 units)	<i>n/a</i>	<i>n/a</i>	72 -0%	756 -0%
<b>Estimated Annual CO<sub>2</sub> Emissions 2021</b>			<b>386,879</b> 92.6%	<b>4,495,222</b> 98.2%

The R20 Wave 1 projects will in themselves deliver less than 8% reduction of the Council's own tCO<sub>2</sub>e emissions (<2% of City wide). This is perhaps not surprising as Wave 1 projects

comprise a significant number of strategies, policies and studies, such as the Future City Plan, Birmingham Transport Plan, Urban Forest Masterplan and BEIS Heat Decarbonisation Study, which do not in themselves deliver carbon savings but will play a critical role in influencing and changing behaviour across the city.

Additionally, it is not possible to report on the impact of some Wave 1 projects which will deliver on reducing tCO<sub>2</sub>e emissions such as Tyseley Energy from Waste incinerator upgrade and replacement and the implementation of new waste recycling operational practices, as no data is currently available.

R20 Wave 1 projects also include a number of pilots, such as the Passivhaus pilot and the Hydrogen bus pilot. The tCO<sub>2</sub>e impact of these demonstrator projects will only be known once the pilot evaluation has been completed, at this point the benefits will be known and registered.

In addition, Wave 1 projects comprise a number of projects that are at an early stage of development such as retrofit and district heat network expansion. Further development work is required in these areas to build fuller business cases and develop investable propositions over the next 6-12 months.

Procurement, identified in the Anthesis report as the greatest contributor to BCC tCO<sub>2</sub>e emissions, by switching to green electricity has contributed to tCO<sub>2</sub>e emission savings. However, achieving tCO<sub>2</sub>e emission reduction across the breadth of the £2.3bn annual spend will require BCC support the Procurement initiative to introduce category management as this is the route to incorporating vendor target tCO<sub>2</sub>e performance measures by contract.

Therefore, the Wave 1 projects will require a variety of interventions and different types of support from the R20 Team. For example, projects focused on defining strategic policy will be challenged to identify 'SMART' delivery and action plans and targets. "Pilot" or "demonstrator" projects will be developed to identify options to scale their delivery and secure funding.

The BCC carbon reduction ambitions are not satisfied by the Wave 1 projects. It is incumbent on the BCC directorates to work with the R20 Team and external partners to support work to identify additional candidate opportunities for inclusion in the R20 programme to make progress in achieving its net zero carbon target. The next section elaborates on the development of future waves of projects beyond 2021-22.

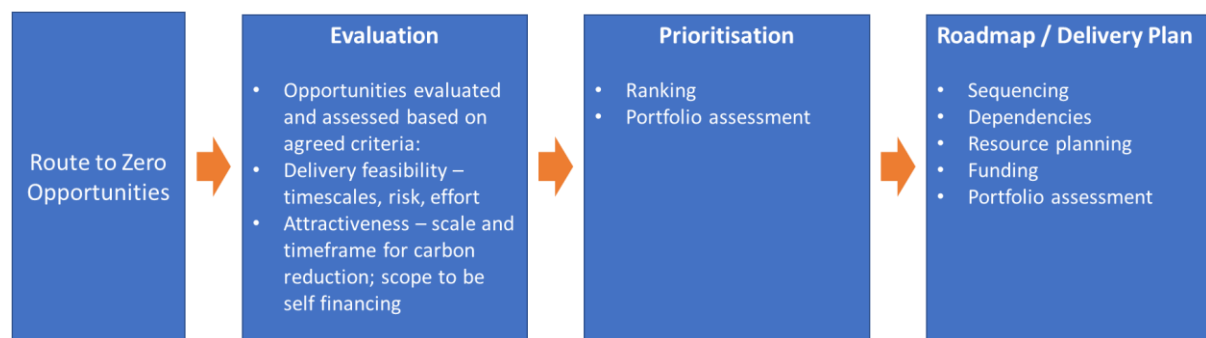
### **3.6 Future waves of projects**

The suite of projects developed so far is evidence of the Council's commitment to achieving its carbon reduction targets and provides a focus for the Council's R20 journey over the next

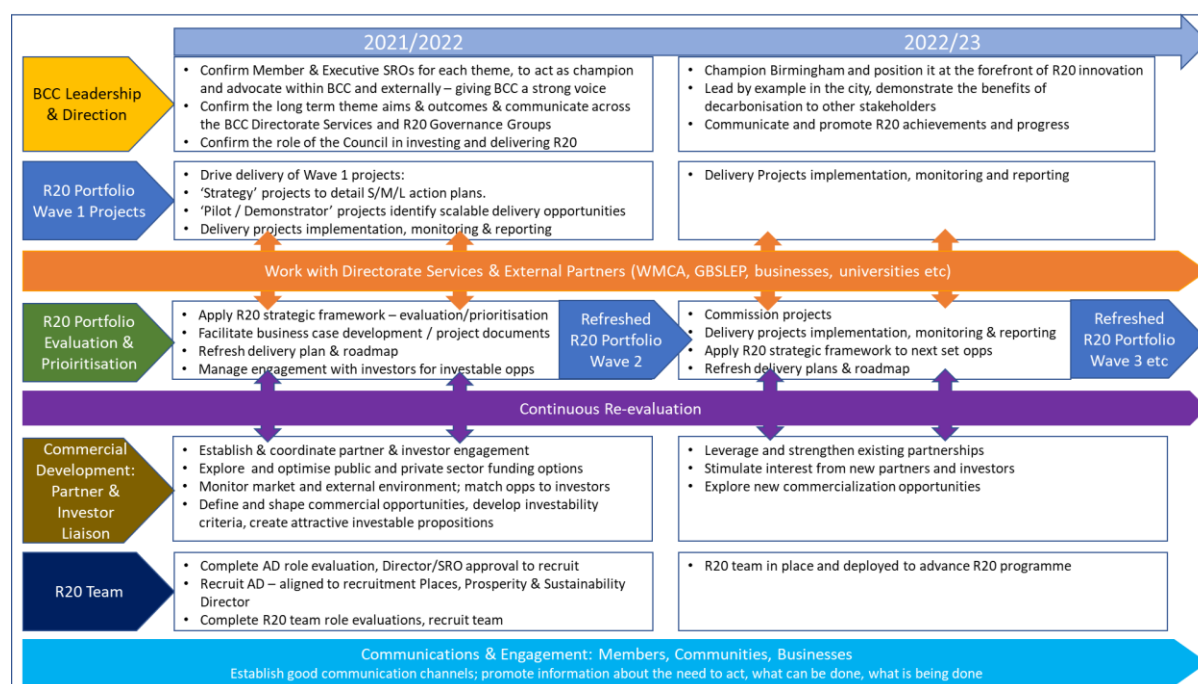
two years. However, it does not cover the totality of the work the Council needs to progress. BCC recognises that in addition to projects to address its own emissions, a very significant proportion of what is required lies outside the direct control of the Council and across multiple fronts from mobility and transit, to industrial processes, natural environment and behaviour change. To lock in forecasted and future net zero target reductions, BCC needs to continue to review the current projects' carbon impact and value for money and develop the R20 portfolio to incorporate additional projects, expanding scope and reach beyond the projects approved by the Council in January 2021.

Further, more detailed work in identifying, costing and prioritising opportunities identified for BCC and more widely across the city is required. It is proposed that the strategic framework applied to the appraisal and definition of the Route to Zero Wave 1 projects is adopted and used to evaluate and prioritise subsequent waves of Route to Zero opportunities and projects which will address 'big ticket' items (Wave 2) and take advantage of the evolving political and technological environment (Wave 3).

**Figure 26: R20 Portfolio Management - Strategic Framework**



The R20 high level plan for the next 24 months is described in the Management Case (Section 6.5.3) and duplicated below.

**Figure 27: R20 Portfolio Development and Delivery 2021/22 – 2022/23**

The plan adopts and incorporates the strategic framework in order to map and prioritise opportunities (as shown in Figure 26 above) to clearly identify which opportunities should be progressed in favour of others. Those opportunities that have both high attractiveness and high feasibility will be taken forward into subsequent waves in the portfolio. The portfolio of initiatives will be regularly reviewed and updated in the light of evolving information and developments. New initiatives may be added to the development portfolio, and existing ones dropped, in order to maximise the overall (economic and social) return on investment within the Council's affordability envelope.

### 3.7 Wave 1 – Scalable / Commercial Opportunities

The R20 programme has identified a series of Wave 1 opportunities which are of scale, commercial in nature and have the potential to contribute significantly to BCC strategic objectives and R20 aims, three of the opportunities additionally have the potential to deliver revenue to BCC. These projects (Retrofit, District Energy Scheme, Electric Vehicle Charing Infrastructure, Procurement and Low Emission Buses) will be a core focus for the R20 programme from April 2021. A summary statement for each of the above is set out in the Commercial Case in section 4.3.

---

## 4 The Commercial Case

### 4.1 Introduction

Stated simply, the UK and the world have until 2050 to eliminate all carbon dioxide emissions if it is to minimise the worst risks of global warming. BCC's target to become net zero carbon by 2030, or as soon as possible thereafter as a 'just transition' allows and to be a city that takes a leading role in tackling climate change is bold and ambitious and it requires bold and radical action.

There is no current issue as broad or extensive; it encompasses transportation, electricity generation, heating and cooling residential and commercial buildings, skills and employment, citizen behaviour, hard to abate industrial sectors etc.

Mark Carney the UN Special Envoy on Climate Action and Finance and UK Financial Advisor for COP26 has emphasised that "the transition to net zero is creating the greatest commercial opportunity of our age...investing for a net zero world must go mainstream".

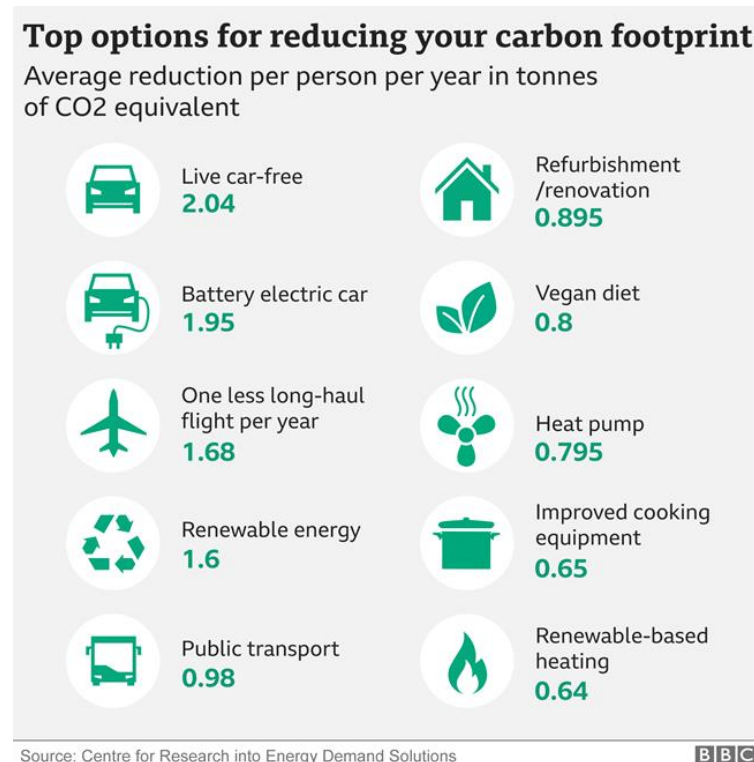
BCC has a great opportunity to provide visionary leadership and to adopt a proactive, enterprising and innovative approach to:

- Influence policy – at a national level and at a local level (as it is doing for example through the Birmingham Development Plan, Future City Plan, Birmingham Transport Plan, Urban Forest Masterplan etc).
- Drive the innovation pipeline - investing and backing ideas and pioneering solutions, including investing at the start of the development cycle when they are higher risk, and facilitating their wider adoption which will, in turn, help to bring down the 'price premium' to encourage take-up and sustainability.
- Act collaboratively to advance shared ambitions to reach net zero - co-creating investable, financially attractive propositions:
  - Using local assets and joining up Birmingham's community of partners (WMCA, other local authorities, LEAs, businesses, academics, community groups, interest groups etc) to turn ideas into demonstrators, develop proof cases through pilots and then scaling them to create economically viable, investable propositions and de-risk investment for private finance.
  - Making best use of market expertise, for example inviting academia and industry, together with entrepreneurs to create innovative solutions and solve climate change challenges; this could include retrofitting existing housing stock, carbon capture, manufacturing, construction, human-robot interaction e.g. autonomous vehicles, agritech etc.



- Explain and promote behaviour change to Birmingham’s citizens and communities – e.g. to encourage responsible consumption, use of sustainable transport, renewable energy consumption, buying energy-saving appliances, controlling heating to save energy and reducing waste as illustrated in the figure below:

**Figure 28: Reducing your carbon footprint**



Building the commercial case and support for increased ‘commercialisation’ in order to realise BCC’s R20 aims is challenging in the context of ongoing budget pressures, reduced central government funding and increased competition for grant and investment funding.

Developing the R20 portfolio presents an opportunity to manage risks and uncertainties across the portfolio as a whole whereby the occasional failure of individual projects to perform to agreed financial tolerances may be acceptable if there are equivalent (preferably larger) over-achievement against targets on other projects in the portfolio. This will require continuous management and monitoring of risk and uncertainty at both project and portfolio level, with tolerances for risk being set at both levels. This will require a different commercial and risk-based approach whereas much attention is given to maximising opportunities to improve financial performance as to minimising downside risk.

## 4.2 Route to Zero Portfolio – Commercial Approach



BCC has been undertaking commercial activity in different forms for many years. Examples of this include, but are not limited to, trade waste, commercial property and Birmingham District Energy Scheme bringing in revenue to the Council.

The Council needs to look beyond traditional public funding routes, adopt a more proactive commercial approach and a different approach to risk in developing and implementing its R20 portfolio. This will include:

- Consideration of a range of potential commercial opportunities from investment in existing ventures (for example Tyseley Energy Park), extending existing pilot and pathfinder initiatives (for example the hydrogen bus pilot, electric vehicle charging infrastructure), new and emerging initiatives/technology solutions (example new technologies for reducing energy demand, carbon capture) and generating efficiencies/cost avoidance.
- Having investability as a focus when defining and packaging projects to attract investment. This will include taking an entrepreneurial approach by working with academia, other local authorities, industry and investors to invite their expertise in tackling common problems eg. retrofitting existing housing stock across Birmingham.
- Developing an appreciation and understanding of emerging market technologies capacities, capabilities, and trends and, through advocating the preferred options, secure interest from potential partners.
- Managing risk at both a project level and a portfolio level, for example larger financial tolerances may be set at project level if the capacity for risk absorption at portfolio level is sufficient and projects that present a risk profile outside the specified tolerance will need to be paused until the risk profile can be reduced or terminated if the risks cannot be mitigated.
- Creating the appropriate contractual framework for each project and programme, taking account of vendor operational commercial drivers and financial measures.
- Adopting proactive partnership models with:
  - SMART quantitative and qualitative measures and incorporating negotiated median and stretch R20 targets.
  - Clarity around BCC obligations and vendor performance goals and measures.
  - Active account engagement and management incorporating a shared approach to risk management.

This approach will enable the Council to:

- Build intelligent client capability, accelerating R20 outcome delivery through adopting a more commercial mindset to drive maximum value from BCC strategic suppliers, driving out costs and securing long term value.
- Increase the pace and scale of deployment, for example driving increased use of clean energy by mapping opportunities and plans for integrated systems across

Birmingham geographies and Council functions to integrate heat, power, transport with spatial planning and digital infrastructure.

- Enable increased synergies and value through collaboration across the city region, sharing resources, increasing purchasing power to reduce unit costs, and maximising value from energy from waste and local heat supply.
- Align R20 projects/initiatives with future funding options.

Accessing central government funding aligned to policy reforms/imperatives will require the Council to create a compelling narrative on how the city and region meets national ambitions and position the city as a place to invest in as funding and finance options become available. This is likely to be positively received by central government who are keen to demonstrate progress with 'shovel-ready'/'ready to go' projects. However, BCC also needs to seek ways of generating money out of zero carbon / green projects. This may require taking calculated risks in terms of investment for potentially high returns and benefits (social, environmental and/or economic).

Funding and financing opportunities will vary according to project scopes, business needs/gaps, risk profile, required carbon savings, available solutions, methods of service delivery and implementation routes. In summary, potential options could include the following: Private funding; Public funding (Central government, WMCA, Existing council funds, Other grants); Self-sustaining; Debt financing; Equity financing; Joint ventures; and Public-Private-Partnerships

- Make sound investment decisions eg. investing in pathfinder projects with the aim of stimulating the market, investing as a 'first mover', investing in providing pump priming investment, making investments in embryonic/emerging green technology companies and taking a longer term view on ROI, borrowing (with due consideration of the many competing demands on the Council's financial assets) and partnership with the private sector.
- Leverage the opportunities presented by the shared ambitions of local authorities in the West Midlands and the WMCA shared ambition to reach net zero; working collaboratively, engaging and lobbying central government and private sector investors to secure maximum impact.
- Harness the ingenuity and innovation across a range of partners including businesses and academia; this could for example include competition-based mechanisms to invite others to tackle the city's 'net zero' challenges such as retrofitting BCC's domestic housing stock of circa 60,000 units; inviting the market to respond to the challenge and bring forward innovative solutions.

#### **4.2.1 Adopting new technologies for sustainability**

Adopting new technologies at scale will be a key enabler to supporting BCC in delivering its net zero ambition. It is recognised that carbon reduction/green technologies and solutions

are rapidly evolving, and the Council will need to monitor and evaluate the potential afforded by such solutions/innovations and their adoption.

The Council will consider the most appropriate commercial approach in relation to deploying and contracting proven established technologies and in building project-based partnerships around emerging technology.

Reducing carbon emissions across the breadth of BCC services will require a range of technologies to be considered, each of which are at different levels of maturity, for example: the implementation of real time air quality monitoring for BCC in 2019 is an example of adopting mature technology and key to the Council's Clean Air Zone – 'Brum Breathes' programme.

Where mature technologies are deployed through R20 projects, it is likely that a more traditional commercial engagement model will be adopted with a focus on cost of acquisition, service, total cost of ownership, and target low carbon measures.

Where the Council's R20 projects are 'pathfinders', exploring the application of new technologies, BCC can adopt a more involving partnering engagement model which reflects the learning from earliest innovators, shaping the delivery to align with BCC objectives and establishing a shared roadmap to deliver increasing levels of carbon reduction and other benefits.

BCC also recognises that many of the technologies and innovative solutions needed to get to net zero eg. carbon capture technologies, low carbon transport and heat innovation do not yet exist or are in early stages of development and therefore not available at the scale and price point for wide scale adoption.

'Climate tech' encompasses a broad set of sectors all engaged in tackling the challenge of decarbonising the global economy, it includes cross-cutting areas, such as carbon capture and storage. Examples of the breadth of technology options are shown in the figure below:

**Figure 29: 'Climate Tech' options**

Energy	Mobility & Transport	Food, Agriculture & Landuse	Heavy Industry	Built Environment	GHG Capture & Storage	Climate & Earth Data Generation
<ul style="list-style-type: none"> <li>Renewable energy generation (e.g. large scale wind and solar power)</li> <li>Nuclear generation</li> <li>Grid management</li> <li>Waste heat capture/ conversion/ storage technology</li> <li>Alternative fuels</li> <li>Energy storage (thermal or electricity)</li> <li>Low GHG extraction and maintenance</li> <li>High efficiency energy intensive electronics, and smart monitoring/ management</li> </ul>	<ul style="list-style-type: none"> <li>Low GHG Air Transport</li> <li>Low GHG Shipping</li> <li>Micro-mobility</li> <li>Low GHG Light and Heavy Duty</li> <li>Road transport: EVs &amp; High Efficiency vehicles</li> <li>Efficient transport systems e.g. public transit and biodiesel innovation</li> <li>Batteries/Fuel Cells</li> </ul>	<ul style="list-style-type: none"> <li>Alternative foods/low GHG-proteins</li> <li>Vertical &amp; urban farming (including aquaponics)</li> <li>Agricultural biotech/genomics &amp; natural solutions</li> <li>Precision agriculture &amp; robotics</li> <li>Low GHG/energy efficient equipment</li> <li>Earth &amp; Marine protection</li> <li>Deforestation prevention, reforestation &amp; afforestation</li> <li>Land use management</li> <li>Value chain GHG reduction</li> <li>Low GHG Fertilizers, Pesticides, Insecticides &amp; therapeutics</li> </ul>	<ul style="list-style-type: none"> <li>Low GHG chemicals (beyond plastics)</li> <li>Low GHG Iron, Steel and Aluminium</li> <li>Low GHG plastics or plastic alternatives</li> <li>Low GHG Concrete and Alternatives for construction</li> <li>Energy/resource efficient manufacturing processes</li> <li>Extreme durability for energy intensive materials</li> <li>Low GHG extraction and supply</li> <li>Transformative circularity, recycling and materials efficiency solutions</li> <li>Industrial residuals treatment and management</li> <li>Low GHG: other materials</li> </ul>	<ul style="list-style-type: none"> <li>High efficiency fixtures and fittings</li> <li>High efficiency lighting</li> <li>High efficiency space-water heating and cooling</li> <li>Building level (electricity and thermal) storage</li> <li>Low GHG construction processes</li> <li>High efficiency urban spaces and communities</li> <li>Transformative circularity and recycling</li> <li>Commercial and residential residuals treatment and management</li> <li>Green building retrofits in major cities</li> </ul>	<ul style="list-style-type: none"> <li>Carbon capture, usage &amp; storage (CCUS)</li> <li>Biomass Uptake of CO<sub>2</sub> (excluding afforestation and land management)</li> <li>Geo-engineering based direct air capture and storage</li> <li>GHG monitoring and management platforms</li> </ul>	<ul style="list-style-type: none"> <li>Climate/earth data generation</li> <li>Low-GHG satellites and sensors</li> </ul>

The Council's approach to managing the suite of R20 projects as a portfolio enables it to make informed decisions about when and how it determines to pursue such solutions.

The investment portfolio is of scale, complex and will require significant funding to complete. Selecting from competing priorities - where, when and how much investment - to achieve net zero will be key consideration for BCC. For example, the target to tackle domestic fuel efficiency and retrofit the circa. 60,000 council owned homes at an estimated cost of £2.5bn over 30 years. Delivering on this aim will create high demand for new technologies such as ground and air source heat pumps, insulation and thermally efficient building façades, and solar PV roofing to supply energy during peak demand and export excess to the grid. With 6.5m council owned properties in the UK, and a Government ambition to retrofit all homes to EPC Band C standard by 2035, demand for these types of technologies will likely outstrip supply in the short term. Increasing demand will bring refinements in production and economies of scale that will reduce unit costs over time.

BCC's commercial approach will need to evaluate how much of a 'first mover' premium it is willing to fund to push to be at the forefront in delivering on its ambitious targets. It is possible, but not certain that Government will compensate early adopters for higher costs. To take advantage of "seed funding" BCC needs to be agile and constantly re-evaluate the business cases for investment as the landscape evolves.

With the accelerating evolution of technologies adopting smarter connected capabilities, BCC will need to be mindful of the risks of being a 'first mover' as the upgrade pathway may limit access to desired future benefits such as IoT and Analytics enablement, the ability to undertake predictive maintenance or identify citizens in fuel poverty.

### 4.3 Route to Zero Portfolio – Wave 1 Projects - Commercial Opportunities

The R20 programme has identified a series of Wave 1 opportunities which are of scale, commercial in nature and have the potential to contribute significantly to BCC strategic objectives and R20 aims, three of the opportunities additionally have the potential to deliver revenue to BCC. These projects will be a core focus for the R20 programme from April 2021 they include:

- **Retrofit** – for an identified subset of the housing stock, explore a scale, exemplar retrofit and financing project which adopts the principles of the circular economy and identifies private sector investment such that the delivery would be at minimal cost to BCC.
- **District Energy Scheme** – coordinate efforts across a variety of internal BCC and external stakeholders to create a business case to support decarbonization and expansion of the district energy scheme, which delivers on R20 aims and is revenue generating for BCC.
- **Electric Vehicle Charging Infrastructure** – Explore options to optimise EV charging infrastructure.
- **Procurement** – work to implement intelligent client / category transformation and build a business case to coordinate procurement activity across the wider West Midlands region, targeting delivery of CO<sub>2</sub> savings and lower contract costs, driven by purchasing economies of scale.
- **Low Emission Buses** – work with TfWM and provide leadership across Birmingham in decarbonising transport and driving zero-emission adoption electric / hydrogen buses.

### 4.4 Route to Zero Portfolio - Future waves of projects

The strategic framework described in the Economic Case (Section 3.6) will be used to identify, evaluate and prioritise subsequent waves of Route to Zero opportunities and projects. The strategic framework enables the Council to take a portfolio approach to both investment and spend decisions to clearly identify which opportunities should be progressed in favour of others and where investments aim to deliver a return to fund further investment.

### 4.5 R20 Projects - Commercial arrangements

The commercial case for the delivery of individual Route to Zero projects in the portfolio will be developed on a case-by-case basis. It will include consideration of the procurement strategy, risk allocation, contractual arrangements, implementation timescales, commercialisation options and accountancy treatment. This reflects the composition of Wave 1 projects which incorporate both strategic policy and delivery projects and projects at different stages in their development lifecycle. Those projects at formative stages in their development will develop their commercial case in increasing level of detail as they create outline and fuller business cases in readiness for implementation. A core principle in developing the commercial case within business cases will be the aim to be financially self-sustaining and to assess opportunities to generate a return on investment in the long term.

#### **4.6 R20 Projects - Procurement**

It is anticipated that the Council will commission a range of internal and external partners to develop and deliver defined projects.

The Council will lead by example in its own commissioning and procurement of goods and services. It has undertaken to ensure that the procurement of any external services and delivery partners includes a commitment to reduce/eliminate carbon emissions and to support suppliers/partners in the local area where appropriate. Within the Route to Zero Wave 1 portfolio Procurement has initiated a project focused on updating the Council's Commissioning and Procurement Strategy to incorporate more rigorous carbon criteria, work with all commissioned services and major procurements to ensure they have carbon reduction measures and targets in place and ensure that contracts are proactively managed to monitor their effectiveness (as described in Section 4.3.4 above).

---

## 5 The Financial Case

### 5.1 Introduction

Achieving net zero will require significant investment. The NAO estimates this at ‘hundreds of billions.’ The level of investment needed underscores the need for the Council to adopt a strategic commercial approach to increase investment for the R20 portfolio.

Investors are increasingly alive to the importance of addressing the priorities of climate change, social justice and poverty. Similarly, Covid-19 has demonstrated the ability for partners to act together and at pace when faced with a global challenge. The economic recovery provides an opportunity to build back better and support a socially just transition.

Investors are actively pursuing options to offer capital funding based on recognising the long term (30-year) investment return benefits to secure up front capital through a combination of public and private sources. The current economic climate, characterised by prevailing low interest rates, supports looking at a range of financial vehicles with a view to investment in low carbon infrastructure. Options include Green city bonds, Green Infrastructure funds, city Angel investment funds, community green grants and crowd funding.

A key role for BCC will be to:

- Secure funding and other resources, optimising use of available public sector funds and developing and cementing relationships with investors.
- Co-create investable, financially attractive propositions, using local assets and joining up its community of partners (WMCA, LEPs, businesses, academics, community groups, interest groups etc) to turn ideas into demonstrators, develop proof cases through pilots and then scale them to create economically viable, investable propositions with a credible route to financing and de-risking investment for private finance.
- Determine the Council’s commercial approach in making investment decisions as described in the Commercial case e.g. investing in pathfinder projects with the aim of stimulating the market, investing as a ‘first mover’, investing in providing pump priming investment, making investments in embryonic/emerging green technology companies and taking a longer term view on ROI, borrowing (with due consideration of the many competing demands on the Council’s financial assets) and partnership with the private sector.

The R20 Team will work proactively with both public and private sector partners to identify potential funding sources, shape R20 opportunities (e.g. new technologies, new products, pathfinder projects etc) to be investment ready and lobby for and support bidding and commercial negotiations with investors.

---

The table in Appendix 2 outlines some of the different types of Government and other funding that could be used; this list is not exhaustive and other private funding mechanisms will be explored.

### **5.1.1 R20 Projects – Financial Case**

The financial case for the delivery of individual Route to Zero projects in the portfolio will be developed on a case-by-case basis including consideration of financing options, managing risks effectively, affordability with the expectation of the portfolio being financially self-sustaining in the long term whilst at the same time delivering against its R20 objectives.

### **5.1.2 R20 Wave 1 Projects - Financial expenditure**

As outlined in the Economic Case above, the appraisal of Route to Zero Wave 1 projects indicates that a number of key contributing projects such as retrofit, district heat networks, energy from waste and zero emissions vehicles are at an early stage of development and further development work is required to build fuller business cases and develop investable propositions over the next 6-12 months.

### **5.1.3 R20 Team - Financial expenditure**

It is proposed to establish a dedicated R20 team to take R20 forward (as described in the Management Case). The estimated funds needed for the R20 team are summarised in the table below with a total annual cost for staff, an additional budget for external expertise and a pump-priming fund allowance.



### R20 Team short term funding requirements

	Cost £ 2021-22 (assumes 25% of total for January to March 2022)	Cost £2022-2023	Total
R20 Team salaries (new posts only, excluding AD post and the three existing, transferring posts)	£82,239	£328,955	£ £411,194
<b>Existing Establishment Posts without Budget (see para.3.x. below)</b>	£36,669	£146,674	£183,343
Additional external consultancy/subject matter expertise (commissioned as required)(1)	£25,000	£100,000	£125,000
Notional pump-priming fund allowance (2)	£25,000	£75,000	£100,000
Support Function Capacity (e.g. Legal, Finance, Procurement, Other)	£41,000	£164,000	£205,000
<b>Total</b>	<b>£209,908</b>	<b>£814,629</b>	<b>1,024,537</b>
<b>Notes:</b> (1) Commissioned as required to support the development/delivery of individual projects. (2) Seed corn funding to stimulate and pump prime pathfinder projects to be in a position to secure future public/private sector investment.			

At this stage, the analysis of financial implications, as summarised in the table above, is focused on the short-term (2021-22 partial year and 2022-23). The additional capacity and capability will enable BCC to drive the R20 programme in the short term 2021-22 and 2022-23 as described in the Management Case (Section 6.2).

The R20 team will support the development of business cases to secure carbon reduction, these are likely to require long-term funding. The R20 team will work to identify and securing funding from the public and private sector. They will actively manage the R20 portfolio to ensure that the R20 opportunity/project pipeline is maintained. The R20 team includes a Finance and Bids Manager who will provide critical support in developing material and content to support bids and shaping and packaging bids to secure investment.

The financial case for the medium to longer term R20 portfolio and its constituent projects beyond 2021-22 and 2022-23 will be developed in the series of individual business cases with the objective of the entire portfolio being financially self-sustaining in the long term. Detailed cash flows for individual R20 projects will be developed in the individual business cases.

### 5.1.4 Overall affordability and balance sheet treatment

Implementation costs for the R20 team include:

- Recruitment
- Consultancy/Project Management
- Expert advisors / subject matter experts

The first six months of the staffing establishment costs in 2021-22 (Jan to March) and 2022-23 (April to June) will relate to the creation of systems and processes to implement and measure programme parameters; along with 100% consultant/subject matter expertise and 20% support function capacity and will be classified as transformational in accordance with the Statutory Guidance on the Flexible Use of Capital Receipts 2016 and this expenditure will be funded from the £15m Inclusive Growth 'Transformation' pot, (part of the £65m sourced from capital receipts in 2021-22). The remaining nine months of 2022-23 will be a combination of ongoing transformation (50%) to embed R20 across the Council and 50% operational business as usual. It is proposed that the remainder of the costs for the R20 team to the end of 2021-22 are funded from the Delivery Plan Reserve resources, as agreed during the Council's 2021-22 budget setting:

	Actual Categorisation	Transformational		Revenue		20%		Capital		TOTALS	
		TRANSFORMATION SPEND (Revenue expenditure but capitalisable)		OPERATIONAL SPEND (Revenue expenditure)		SUPPORT FUNCTION CAPACITY - assumed at 20% of revenue spend (Revenue expenditure)		CAPITAL SPEND (Capital expenditure)			
Assumed Categorisation	£k	2021/22	2022/23	2021/22	2022/23	2021/22	2022/23	2021/22	2022/23	2021/22	2022/23
Transformational	Transformation spend (able to fund from capital receipts up to 31 March 2025 but not thereafter)	0	0	220	599	44	120	0	0	264	719
Revenue	Operational spend (revenue expenditure)	0	0	0	0	0	0	0	0	0	0
Revenue Ongoing	Indefinite Operational (revenue) expenditure	0	0	0	253	0	51	0	0	0	304
Capital	Capital spend that is directly related to the creating of a tangible asset (capitalisable)	0	0	0	0	0	0	0	0	0	0

In line with the commentary at 1.5.3, an appropriately sized revenue budget to finance the ongoing costs will be established as part of the MTFP process.

The R20 team will play a critical role in embedding R20 considerations and portfolio management processes throughout the Council, promoting a fundamental transformation in the delivery of services with the aim of reducing carbon emissions. It is anticipated that this will apply to approximately 50% of future staffing establishment costs and subject to

---

Statutory Guidance beyond 2021-22 this may be classified as transformational and chargeable against capital receipts.

The R20 team will play a critical role in embedding R20 considerations and portfolio management processes throughout the Council, promoting a fundamental transformation in the delivery of services with the aim of reducing carbon emissions. It is anticipated that this will apply to approximately 50% of future staffing establishment costs and subject to Statutory Guidance beyond 2021-22 this may be classified as transformational and chargeable against capital receipts.

It is expected that the portfolio will incorporate a balanced mix of cost efficiency, cost reduction and income generating projects. Every effort will be made for the R20 portfolio to be financially self-sustaining in the long term; indeed, the recent (December 2020) Climate Change Committee report “The Sixth Carbon Budget: The UK’s path to Net Zero”<sup>7</sup> highlights that the savings derived from carbon reduction over time have the potential to ‘cancel out’ the investment costs. This objective will primarily be met with government and private sector investment.

### **5.1.5 Benefits arising from the programme**

The R20 Programme will establish a dedicated and experienced R20 team within the Places, Prosperity and Sustainability Directorate (as described in the Management Case). The R20 team will, led by a new Assistant Director position work across the council to progress R20 projects, leading and shaping efforts by departmental colleagues and external partners to secure delivery of R20. The investment establishes a team which will be focused on the strategic R20 objectives and targets. They will drive efforts to progress carbon reduction, aligned to inclusive and resilient growth. Investment in the R20 Team enables BCC to deliver on its commitment to become net zero carbon by 2030 or as soon as a just transition allows by developing and delivering a portfolio of R20 projects that will deliver against that target and avoid the costs associated with responding to climate emergencies/events.

The R20 Programme is an investment to lead efforts to ensure BCC delivers on its R20 aims. The team will bring a mix of strategic, commercial and delivery skills and a dynamic approach to identifying and evaluating opportunities and translating them into realisable projects that enable the portfolio to be financially self-sustaining in the long term. The projects falling within the R20 portfolio will support the council on a number of its aims including, reducing fuel poverty, decarbonising energy and transport provision, expanding adoption of electric

---

<sup>7</sup> <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

vehicles, creating green spaces for citizens and encouraging the development of green economy skills and industry.

The programme contains many opportunities to deliver financial benefit to the public sector, a number of examples include:

- Improvement in the thermal efficiency of homes which will reduce both fuel poverty and the associated adverse health impact on the most financially vulnerable residents.
- Implementing low-cost energy efficiency measures in schools and colleges can significantly reduce carbon emissions and generate a financial advantage to the participating establishments.
- Transition to Green Energy for Property and Highways portfolios to deliver significant carbon saving.

Examples of savings arising from the examples above are:

- Improvement in Thermal Efficiency: BRE estimates the cost to the NHS of ill-health due to poor housing (characterised as having low thermal efficiency) at £2.5b p.a. The ONS highlights the relationship between health conditions (e.g. respiratory and cardiovascular diseases) and low indoor temperatures and low energy efficiency. Some 25,000 people die each year in the UK as a result of living in cold temperatures much of this is due to living in poorly heated homes<sup>8</sup>. This pro-rates to approximately £50m annually for services provided to BCC residents; if as little of 10% of the impact of poor housing is as a result of thermal inefficiency, that results in £5m per annum of NHS provision avoided.
- In addition, anecdotal evidence suggests that savings to Schools and Colleges through improved thermal efficiency could save around £20k per site annually. 180 schools remain within the BCC estate and so could deliver £3.6m per year of savings with these improved measures.
- While the transition to 100% Green Energy has a net financial cost, initial industry estimates (West Mercia Energy, Total Gap and Power) of the environmental impact are that each £1k spent reduces carbon emissions by 380 tonnes per year.

The objective for this team is to create a portfolio of R20 projects which are self-sustaining in the long term. The team will seek opportunities for commercialisation. They will facilitate the development of business cases for individual opportunities / projects which will identify and capture investment costs, expected savings and revenue generated.

---

<sup>8</sup> <https://www.local.gov.uk/sites/default/files/documents/healthy-homes-healthy-liv-db2.pdfv>  
<https://www.local.gov.uk/sites/default/files/documents/healthy-homes-healthy-liv-db2.pdfv>



## 6 The Management Case

### 6.1 Introduction

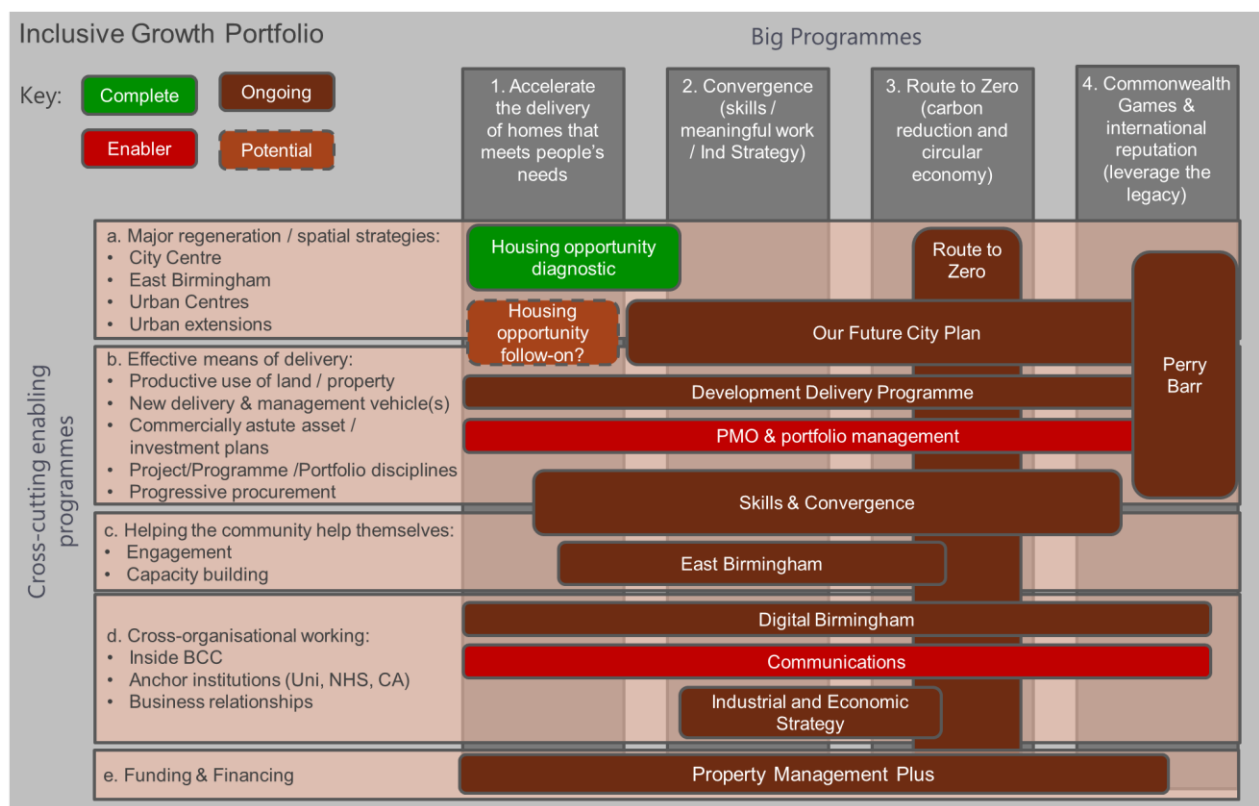
This section of the business case sets out the proposed structure and composition of the additional delivery capacity and capability (R20 team) and addresses how the R20 programme will be delivered.

### 6.2 Proposed R20 team

#### 6.2.1 R20 Team: Target Operating Model

R20 is one of the 'Big Programmes' that make up the Inclusive Growth portfolio; it is relevant to and cuts across all parts of the council as illustrated in the figure below. It also extends to working with a wide range of partners (for example, WMCA, Local Enterprise Partnerships, other local authorities and agencies, businesses and academia).

**Figure 30: Inclusive Growth Portfolio**



R20 is itself a portfolio of projects at both functional and organisation levels. The selection, prioritisation, delivery and control of R20 needs to be coordinated and managed in line with BCC's strategic objectives and capacity to deliver. The goal is to ensure R20 is adequately resourced, reflecting the priority afforded it by Council, enabling the Council to make a stepped change in progressing R20 outcomes and return on investment and maintaining business-as-usual.

While a large number of initiatives have been marshalled under R20, this effort has to date been uncoordinated and has taken place in the absence of a R20 portfolio strategy, with a limited analysis of the contribution that individual projects/ initiatives are making to carbon reduction and the overarching carbon reduction trajectory.

The Council's current internal resources are severely stretched, and work is constrained. In its current state the R20 portfolio falls short of what is required to address the net zero carbon ambition. To create the headroom necessary to identify new projects which reflect the ambition of the Council and progress the projects at pace, the City Council will need to direct significant additional resources to the R20 programme.

The Council has also recognised that its current resources in the critical areas of portfolio definition and management, project definition and delivery, business case development, bid development and commercialisation are stretched. Resource availability is constraining the Council's ability to assemble a robust and coherent R20 portfolio and apply effort to developing scalable R20 projects (e.g. retrofit of housing stock, district heating, transport decarbonisation and EV charging) and exploring potential commercial opportunities.

It is proposed to invest in additional capacity and capabilities through the creation of a dedicated, specialist R20 team.

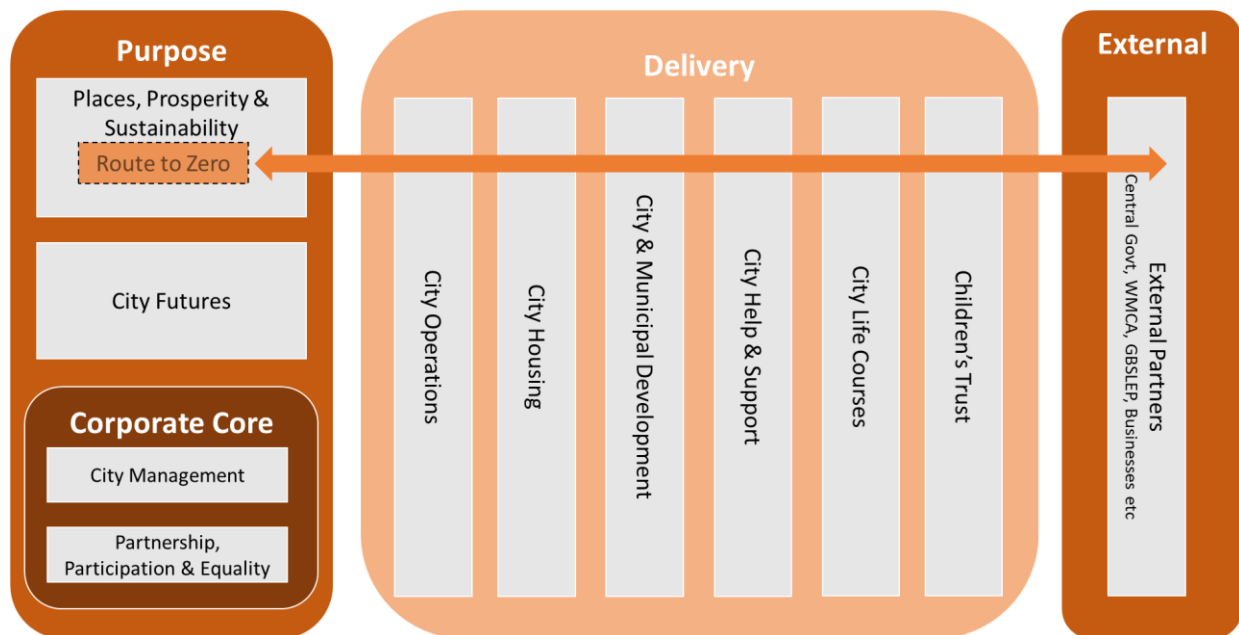
The target operating model for the R20 team within the Places, Prosperity and Sustainability Directorate (Purpose) has been developed and tested through discussions with BCC officers and by reference to the functional teams in place within other local authorities, for example Manchester and Bristol.

### **6.2.2 R20 Team: Purpose and Objectives**

To deliver the Council's R20 Strategy, it is proposed to establish a dedicated and experienced R20 team within the Places, Prosperity and Sustainability Directorate (the principle of appointing an Assistant Director for Climate Change was endorsed by Council in January 2021 and the funding for an Assistant Director-Route to Net Zero Carbon was approved in the mid-term financial Plan in February 2021).

The R20 team will, led by a new Assistant Director position and will work with colleagues across the Council and with external partners to lead, shape and progress delivery of the R20 portfolio; this is illustrated in the figure below.

**Figure 31: R20 within the new corporate structure**



The R20 team will be part of the Council's Purpose function, reporting directly to the Director for Places, Prosperity and Sustainability, in some instances it is likely that members of the R20 team may have a dotted reporting line to Delivery units in supporting the delivery of specific R20 projects and opportunities.

The purpose of the R20 team is to support the organisation in delivering its net zero carbon ambition. The team will be focused on R20 strategies, priorities and targets and will commission work from Delivery units. They will drive efforts to progress carbon reduction, aligned to inclusive and resilient growth. The team will bring a mix of strategic, commercial and delivery skills and a dynamic approach to identifying and evaluating opportunities and translating them into realisable projects that enable the portfolio to be financially self-sustaining in the long term. The team will have a fundamental role in leading the shift in behaviours and managing relationships both within BCC and externally with government, WMCA, LEPs, businesses, residents and investors.

The R20 team will perform a critical corporate role in:

- Leading and directing the Council's strategies and policies to address the climate crisis that are inclusive and capable of delivering the route to net zero carbon.



- Ensuring that R20 is embedded in everything we do by working with the Council's delivery functions and partnerships, joining them up and holding them accountable.
- Working with external bodies, including WMCA, GBSLEP and central government departments in shaping and implementing the R20 portfolio to deliver shared carbon reduction ambitions and targets.
- Leading on key relationships relevant to R20: international, national, regional, city wide and local - increasing Birmingham's profile, generating investment in R20 across the city, winning consent for change.

The R20 Team will drive forward the R20 strategy and programme of work, coordinating efforts across BCC delivery functions and with external partners. They will operate as a 'think and do' team:

- Bringing together policy, research, emerging solutions and best practice; this will cover policy, strategy, new technology and new products and applying and adapting them for the local context.
- Shaping and developing a coherent and prioritised portfolio of investable R20 projects and plans for action/delivery.
- Managing the portfolio from conception, through delivery to benefits realisation, monitoring and evaluating outcomes.
- Advising and engaging teams across the whole Council to support promotion of behaviour change and embed carbon reducing practices in their services.
- Commissioning BCC directorates/services and other partners (e.g. WMCA, University of Birmingham, Tyseley Energy Park) to develop and deliver defined projects.
- Positioning Birmingham as a 'testbed' / hub for climate innovation to attract inward investment and green businesses.
- Identifying and securing funding from the public and private sector.
- Continuously managing, monitoring and evaluating the R20 portfolio to ensure it remains relevant, provides a pathway to net zero, projects are delivered and defined outcomes and targets are achieved.

The major interfaces between the R20 team and the other change portfolios and entities in the new corporate structure are described below:

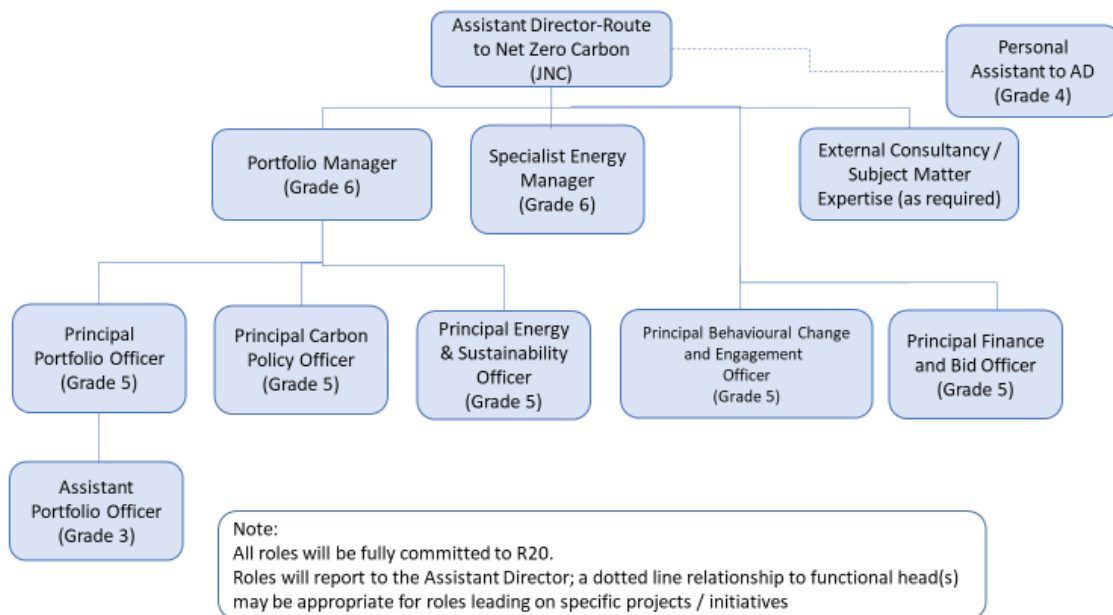
- Places, Prosperity & Sustainability: R20 will ensure that consideration of carbon reduction is embedded in all Purpose functions and programmes e.g. strategic place shaping, strategic asset management, development, industrial and employment strategy.
- City Housing: R20 will ensure all housing stock is managed to agreed environmentally sustainable / energy efficiency standards. It will coordinate expert contributions and provide robust challenge to support the creation of retrofit business case(s) which are ambitious with regard to R20 and wider Council aims such as reducing fuel poverty, creating new low-carbon sector jobs and building low-carbon industries.

- 
- City Operations and City & Municipal Developments: R20 may commission projects for example: to improve the energy efficiency of council owned buildings and other non-housing assets such as leisure centres and schools, to decarbonise transport, to improve waste management and adopt a circular economy strategic approach, to extend use of renewable and low carbon energy.
  - City Help and Support: R20 may commission City Help & Support to undertake programmes of work to further some of its socio-economic aims. For example, the development of green skills; construction skills to increase skills levels and support the creation of jobs.
  - New Ways of Working: R20 may commission projects which support remote and agile working and innovative uses of new technologies.

### 6.2.3 R20 Team: Organisation

The team would be headed by an Assistant Director responsible for leading and driving the development and delivery of the R20 portfolio. The Assistant Director will spearhead BCC's response to the climate emergency, taking a leading role within the Council and externally to establish Birmingham as an exemplar of best practice in the local government sphere. The Assistant Director will have a critical role to play in working across the Council, with political and executive stakeholders, officers across all Directorates and with programme leads within the Inclusive Growth Portfolio. They will also foster relationships and work closely with external partners and investors including for example, influencing government policy by directly engaging with government, working across Birmingham city region with WMCA, the Local Enterprise Partnerships and other public and private sector partners.

The R20 team structure is illustrated in the figure below. Roles and responsibilities for the team are provided at Appendix 4. These have been developed in discussion with senior officers in Planning and Development and with reference to arrangements in organisations (for example, Bristol and Manchester) which are similarly pursuing an ambitious carbon reduction agenda.

**Figure 32: R20 Team: Organisation**

It is anticipated that the composition of the R20 team will be full time permanent employees supported on a case-by-case basis by external expert consultants / solution matter experts as required.

The Portfolio Manager, Principal Portfolio Officer and Assistant Portfolio Officer will take responsibility for a number of thematic projects and programmes. They will mentor and support individual project leads to manage delivery to agreed target outcomes. They will work collaboratively across the R20 Portfolio supporting the evaluation and prioritisation process, the development of business cases and ensuring common adoption of and adherence to documentation, templates and project lifecycle processes. The Portfolio Manager will be responsible for the line management of the Principal Portfolio Officer, the Principal Carbon Policy Officer and the Principal Energy and Sustainability Officer. The Assistant Portfolio Officer will be responsible for administering the series of regular route to zero meetings.

The R20 programme will, through the Principal Behavioural Change and Engagement Officer, facilitate the design and implement the communications strategy, targeting internal and external stakeholder groups. This position will play a crucial role in developing high-quality communications that align to the Council's strategic aims, increase colleagues' engagement in R20 and promote the council's R20 achievements more widely with external communities. This post will also be responsible for designing and implementing a programme of behaviour

change across the Council and the wider city. This post will report directly to the Assistant Director – Route to Net Zero Carbon.

The Principal Finance and Bid Officer will provide critical support in developing material and content to support bids, coordinating contributions from external experts and internal colleagues for major bids, and managing bid quality assurance in order to maximise the quality and completeness of bids ahead of submission. They will also support individual project and consolidated programme reporting on progress to plan, outcomes achieved, and financial performance for R20. This post will report directly to the Assistant Director – Route to Net Zero Carbon.

The Personal Assistant to the Assistant Director-Route to Net Zero Carbon will provide PA support. This post will sit within the current PA reporting structures rather than in the R20 Team.

#### **6.2.4 R20: Governance Arrangements**

BCC has begun to embed governance arrangements which reflect the need for system level change within the Council and also at a city-wide level, this includes:

- A cross party and multi-agency Climate Change Taskforce<sup>9</sup>. The Task Force has helped to shape the priority projects reported to Council in January 2021 which form the basis for the Route to Zero Wave 1 projects. The Taskforce was established to support the preparation of the Route to Zero Action Plan, following approval of this Action Plan at Full Council in January 2021, the role of the Taskforce was reviewed and it transitioned to the Climate Assembly in June 2021. The Climate Assembly first met in June 2021 and will meet 3 times per year, providing a platform to share successes and progress updates and to share knowledge and expertise.
- A cross-party R20 Advisory Committee has been set up, which it is expected will meet once per month<sup>10</sup> following the initial mobilisation and set up period to April 2021. The R20 Advisory Committee is chaired by the Cabinet Member for Transport & Environment with overall responsibility for leadership and direction of the R20 agenda. The committee is comprised of 3 Cabinet Members, 3 Labour Councillors and

<sup>9</sup> The cross-party and multi-agency taskforce is chaired by the council's Cabinet Member for Transport and Environment and includes representation from Conservative, Liberal Democrat and Green councillors, members of the West Midlands Combined Authority, the Local Enterprise Partnerships, Chamber of Commerce and representatives from faith communities and the business, health, education and third sectors.

<sup>10</sup> The group has been established to fulfil a cross party motion, which was agreed at City Council on 15th September 2020, for the creation of an Advisory Committee to oversee delivery of the City Council's own actions and progress towards meeting the net zero target.

---

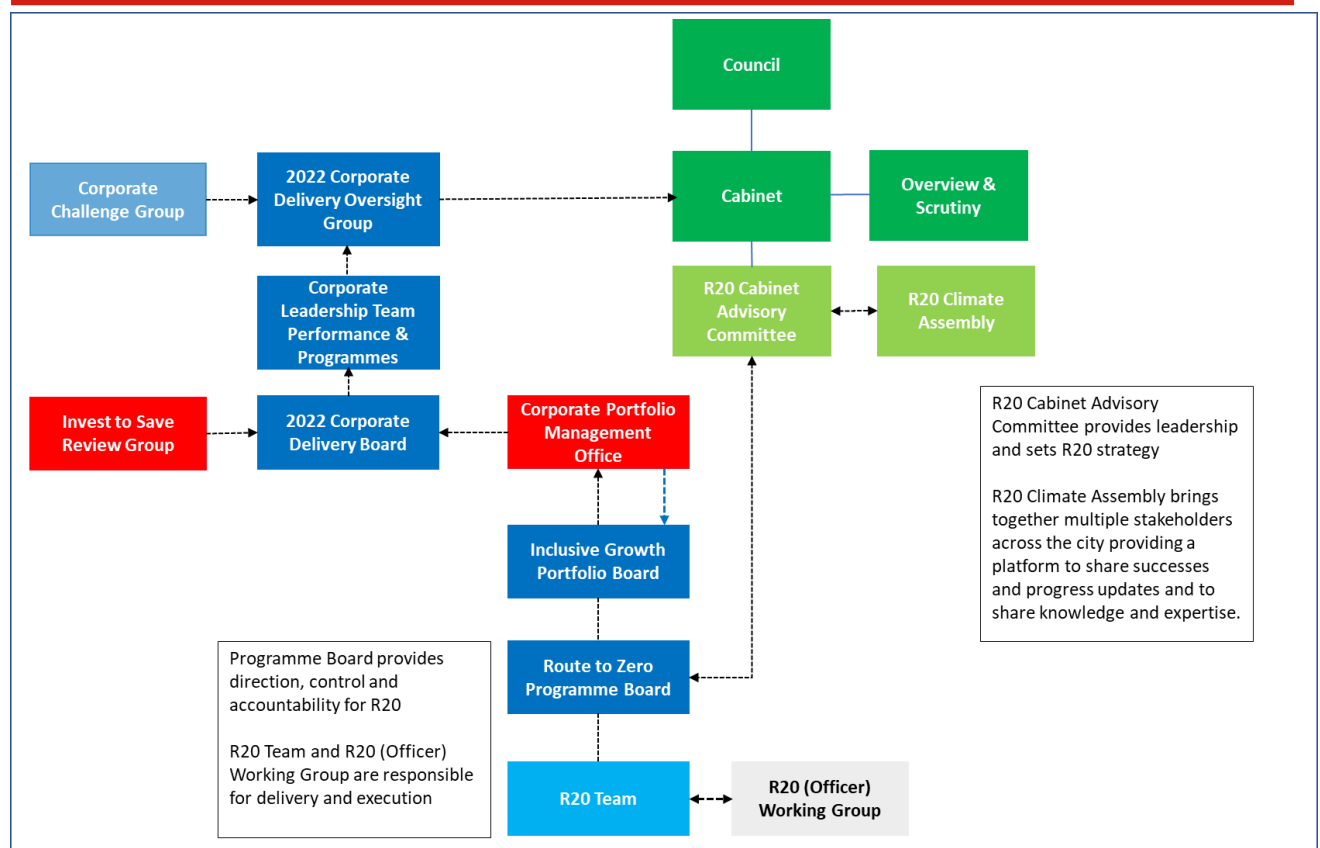
3 Opposition Members R20 will also form part of the council's scrutiny work programme.

- A council internal working group has also been created, including representatives from a number of service areas who are working on delivering the Council's existing commitments, including the early actions outlined in the February 2020 Council Report and those set out within the Route to Zero Action Plan reported to Council in January 2020. The role of the group is to coordinate R20 across council functions and ensure there is cohesive and coherent response in addressing climate issues.

A R20 Programme Board will be established to oversee and drive the work of the R20 portfolio. The primary purpose of the R20 Programme Board is to drive forward its component projects to deliver desired programme outcomes and realise intended benefits. The R20 Programme Board, appointed by the Senior Responsible Owner, includes senior representatives from the areas of the business most affected by the programme, together with any other key support and / or supplier representatives. It is anticipated that specialist officers/project leads will be invited to this meeting as required to present on projects that they are leading.

The R20 Programme Board will report to the Inclusive Growth Portfolio Board. The Inclusive Growth Portfolio Board (along with all strategic delivery programmes) report, via the Corporate Programme Management Office (CPMO), through the Corporate Delivery Board, which is the main decision-making body for matters pertaining to the delivery of approved Portfolio programmes, and to the Corporate Delivery Oversight Group, which brings together Members and Chief Officers to oversee the cross-cutting corporate delivery Portfolio. The position of the R20 Programme Board in the Council's governance structure is shown in the diagram below.

**Figure 33: R20 Governance**



### 6.3 Portfolio Management – Strategic Framework

As described above, R20 is itself a portfolio of projects and initiatives. The strategic framework used to define, prioritise and develop the Wave 1 R20 projects, as described in the Economic Case, will continue to be used to maintain a sustainable suite of R20 initiatives and opportunities and will be managed by the R20 team.

## 6.4 Programme & Project Management

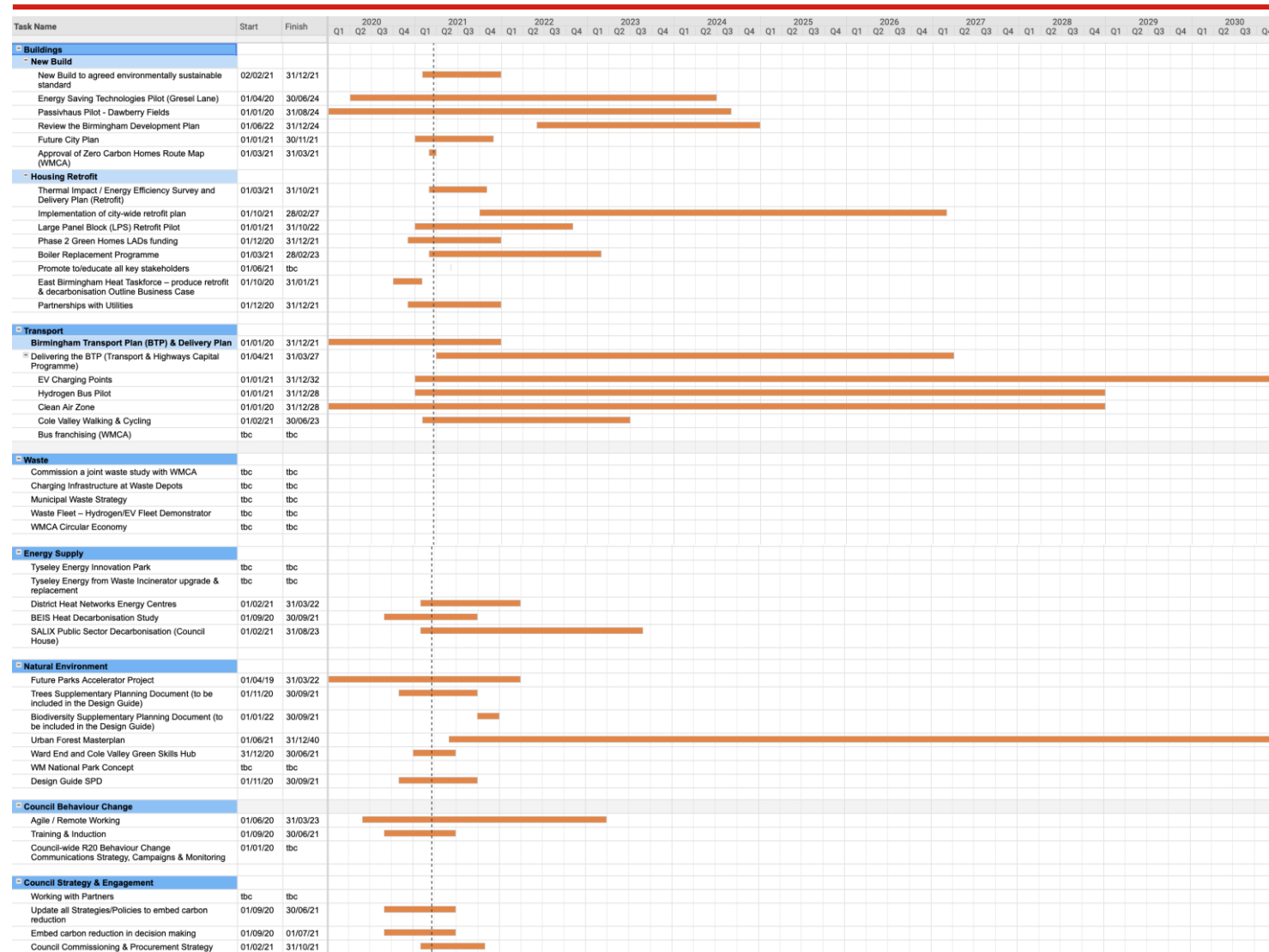
R20 projects will be managed using corporate standard project management methods and the monthly reporting templates implemented by the Corporate PMO in line with the 'Wheel of Fire' or other structures put in place to manage programmes.

## 6.5 Programme Plan

### 6.5.1 R20 Wave 1 Projects

---

The high-level plan for the R20 Wave 1 projects is summarised in the figure below. The tables at Appendix 3 set out the milestones for these projects.





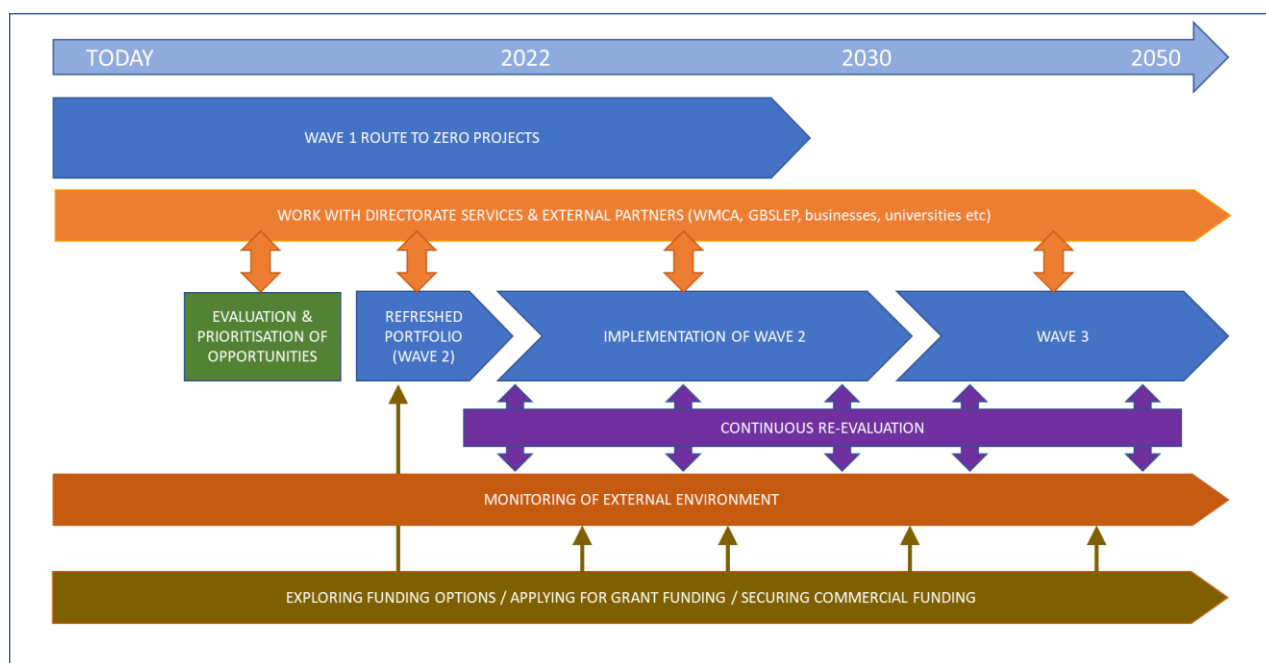
### 6.5.2 R20 Subsequent Waves

Project and programme plans for subsequent waves of R20 projects will be developed as part of the evaluation and prioritisation exercise as outlined in the Economic Case.

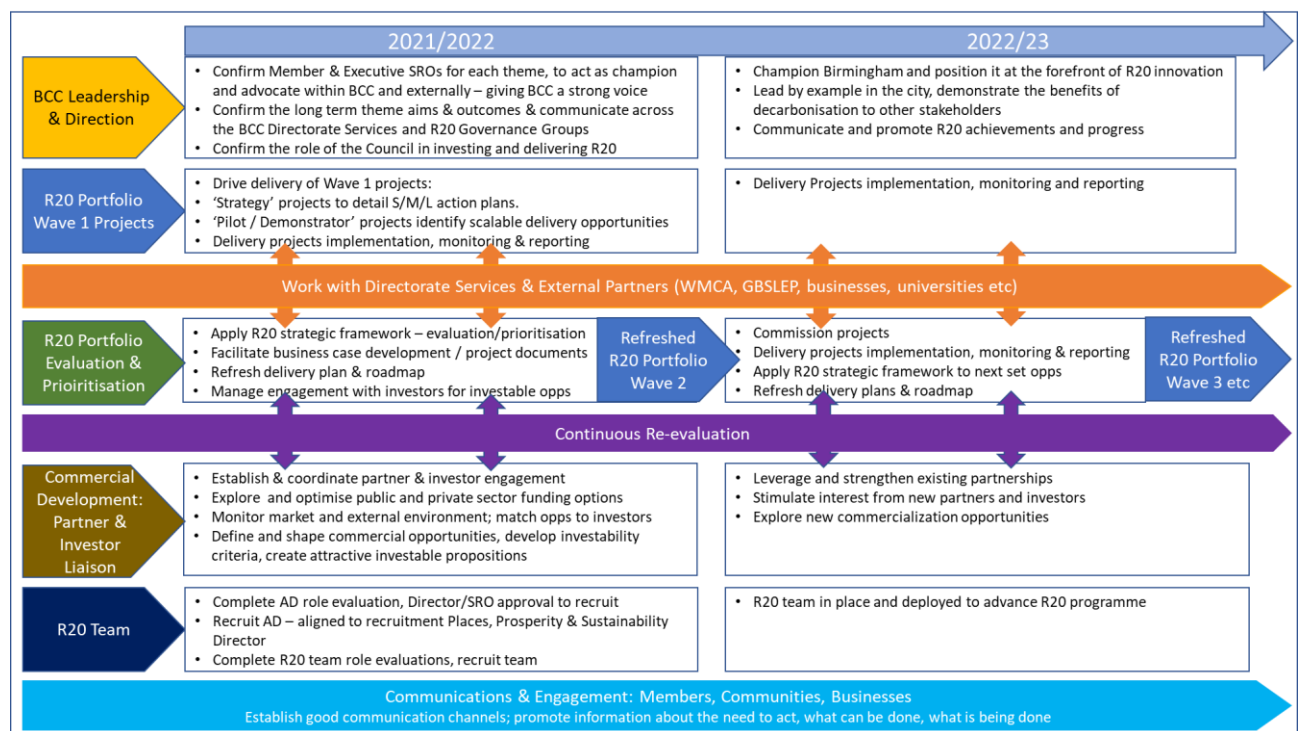
### 6.5.3 R20 Portfolio Development and Delivery

The Council's strategy to its R20 portfolio is set out in the Strategic Case and is summarised below. It is based on adopting a data-driven, structured analytical approach to determine the solutions that make biggest contribution towards carbon zero target, offer the best value for money and are technically feasible.

**Figure 34: Route to Zero Strategy**



To deliver this strategy, the programme of work for the R20 team over the next 24 months is summarised in the figure below:

**Figure 35: R20 Portfolio Development and Delivery 2021/22 – 2022/23**

The programme of work will comprise the following core workstreams:

**Appointing and deploying the R20 Team:** The progress to date in defining the suite of Route to Zero Wave 1 projects as set out in the Economic Case provides BCC with a R20 portfolio baseline; additional capacity and capability is required to continue to develop and drive delivery of the R20 portfolio. The funding to establish a Assistant Director-Route to Net Zero Carbon was agreed by Council in February 2021 and demonstrates the Council’s commitment to delivering its R20 ambitions. The creation of a new Assistant Director R20 position reflects the importance of R20 to the organisation. The City Council are in the process of appointing a candidate to this post.

An exercise to recruit and appoint the remaining R20 team roles will also be required and following approval to proceed, this could take place before the Assistant Director is in post. To progress at pace and maintain momentum BCC will need to continue to put in place transition arrangements to manage the R20 programme and recruitment of the R20 Team.

**Leadership & Direction:** Strong leadership and clear accountability will be key to successfully delivering on the R20 suite of projects. In line with PRINCE2 best practice BCC will appoint a Member lead and a Senior Responsible Officer (SRO) to lead each of the R20 themes (in some cases there may be 2-3 member leads and senior officer leads where projects cross

directorates and portfolio responsibilities). This theme leadership will be responsible for providing each of the projects with strategic guidance and clear objectives and outcomes. They will sponsor the theme projects to staff and members across BCC and also with external partners and impacted communities. The theme leaders will also play a key role in determining the role of the Council, for example in defining its commercial and investment approach.

**R20 Portfolio Wave 1 Projects:** The Route to Zero Wave 1 projects identified as priorities in the report to Council in January 2021 have been subject to a structured review to determine the veracity of their delivery plans, their attractiveness in terms of contribution to net zero carbon and other inclusive growth outcomes in support of a just transition, as described in the Economic Case. This provides a baseline to drive delivery, monitor and report back on progress to Council in January 2022. The Wave 1 projects comprise a mix of projects and will require a variety of interventions and different types of support from the R20 Team. For example, projects focused on defining strategic policy will be challenged to identify ‘SMART’ delivery and action plans and targets and “pilot/demonstrator” projects will be developed to identify options to scale their delivery and secure funding.

The R20 programme has identified a series of Wave 1 opportunities which are of scale, commercial in nature and have the potential to contribute significantly to BCC strategic objectives and R20 aims, three of the opportunities additionally have the potential to deliver revenue to BCC (Retrofit, District Energy Scheme, EV Charging, Procurement, Low Emission Buses). These projects will be a core focus for the R20 programme from April 2021, they are described in the Commercial Case (Section 4.3).

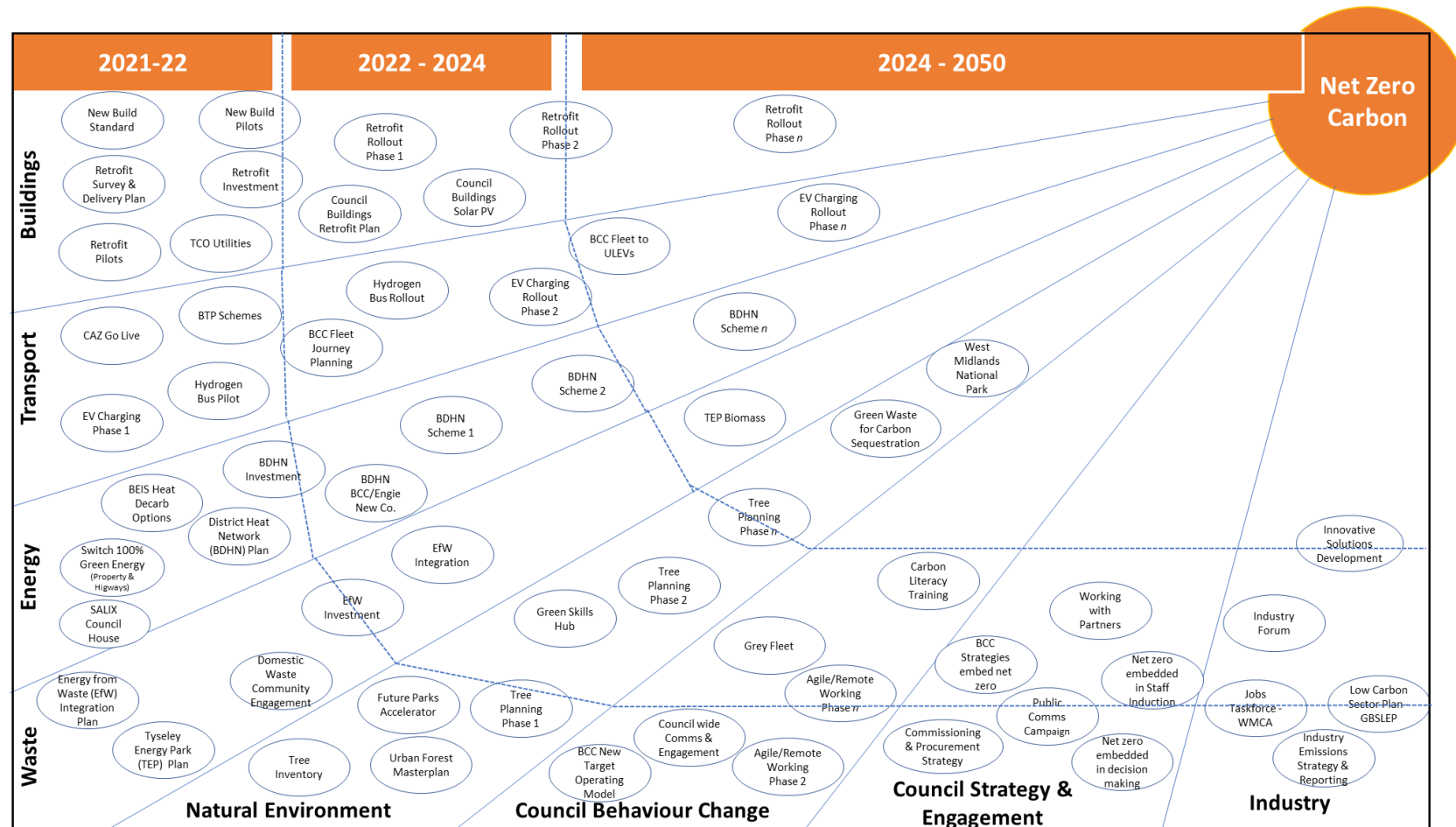
**R20 Portfolio Evaluation and Prioritisation:** The R20 Team will work across BCC directorates and with external partners to identify additional candidate opportunities for inclusion in the R20 programme. It is proposed that the strategic framework applied to the appraisal and definition of the Route to Zero Wave 1 projects is adopted and used to evaluate and prioritise subsequent waves of Route to Zero opportunities and projects to refresh the R20 portfolio; these will address for example ‘big ticket’ items (Wave 2) and take advantage of the evolving political and technological environment (Wave 3). The proposals for Wave 2 and subsequent waves will be submitted to the R20 Programme Board for approval to be included in the R20 portfolio. The R20 Team will facilitate projects through the full lifecycle, from selection, through 5 stage business case model approval, delivery and outcome measurement. They will also work with colleagues and partners to shape and define projects and target potential investors to create attractive investable projects.

The portfolio evaluation and prioritisation will support the Council in developing a strategic 30-year roadmap to reach net zero carbon, setting out the programmes with the potential to make significant contributions to carbon reductions e.g. domestic household emissions,

---

modal shift in transport, carbon sequestration and offsetting. An illustration is provided in the figure below.

**Figure 36: Illustrative R20 strategic roadmap**



---

**Commercial Development: Partners & Investor Liaison:** Achieving net zero carbon is a significant challenge. Much of what is required lies outside the direct control of BCC. BCC will work proactively with partners across the city to deliver and support the changes needed to achieve net zero carbon. Birmingham intends to spearhead the region's inputs to central government to seek to ensure that the West Midlands, and Birmingham City secure a significant share of available funds and have an influential voice in the development of national strategies and policies relating to zero carbon.

BCC will continue to work closely with the West Midlands Combined Authority (WMCA) and the Local Enterprise Partnerships in accelerating delivery and securing external investment from public and private sector investors. The R20 team will play a key role in engaging the support, expertise, experience and resources of partners, coordinating cross boundary working and supporting the Council to secure funding from several sources including UK Government grants, Municipal Bond Agency and equity investors. The R20 Team will monitor the market to retain currency on emerging funding sources and use cases. They will engage with potential investors to establish the investability criteria applicable to candidate R20 opportunities. For the selected investment route, the R20 Team will facilitate the co-design of attractive commercial investable options. They will also consider new commercial avenues and approaches to partnering.

**Communications & Engagement:** Developing a coherent, Council-wide behaviour change communications and engagement strategy will be core to facilitating change within the Council and with external communities and businesses.

## 6.6 Arrangements for benefits realisation

The performance of the R20 portfolio will be measured against a balanced scorecard of measures that reflect the Council's corporate priorities.

## 6.7 Arrangements for risk management

R20 projects will be managed using the corporate standard risk management approach implemented by the Corporate PMO in line with the 'Wheel of Fire' or other structures put in place to manage programmes.

A copy of the risk register is attached at Appendix 5.