



Wednesday, 8 January 2020

To: Members of the SCR - Local Enterprise Partnership and Appropriate Officers

NOTICE OF MEETING

You are hereby invited to a meeting of the Sheffield City Regional Local Enterprise Partnership to be held at **11 Broad Street West, Sheffield S1 2BQ**, on: **Thursday, 16 January 2020 at 11.00 am** for the purpose of transacting the business set out in the agenda.

A handwritten signature in black ink, appearing to read 'D. Smith'.

Dr Dave Smith
Chief Executive

Member Distribution

| | |
|--------------------------------------|-------------------------------------|
| James Muir (Chair) | Private Sector Member |
| Nigel Brewster (Vice-Chair) | Private Sector |
| Lucy Nickson (Vice-Chair) | Private Sector LEP Board Member |
| Laura Bennett | Private Sector LEP Board Member |
| Alexa Greaves | Private Sector LEP Board Member |
| Professor Chris Husbands | Representative for Higher Education |
| Peter Kennan | Private Sector LEP Board Member |
| Tanwer Khan | Private Sector LEP Board Member |
| Neil MacDonald | Private Sector LEP Board Member |
| Owen Michaelson | Private Sector LEP Board Member |
| Richard Stubbs | Private Sector LEP Board Member |
| Bill Adams | TUC Representative |
| Professor Dave Petley | University of Sheffield |
| Councillor Chris Read | Rotherham MBC |
| Mayor Dan Jarvis MBE | SCR Mayoral Combined Authority |
| Councillor Garry Purdy | Derbyshire Dales DC |
| Councillor Julie Dore | Sheffield City Council |
| Councillor Martin Thacker MBE | NE Derbyshire DC |
| Councillor Mary Dooley | Bolsover District Council |
| Mayor Ros Jones CBE | Doncaster MBC |
| Councillor Simon Greaves | Bassetlaw DC |
| Councillor Sir Steve Houghton CBE | Barnsley MBC |
| Councillor Tricia Gilby | Chesterfield BC |
| Councillor Denise Lelliott (Reserve) | Rotherham MBC |

SCR - Local Enterprise Partnership

Thursday, 16 January 2020 at 11.00 am

Venue: 11 Broad Street West, Sheffield
S1 2BQ



Agenda

| Agenda Ref No | Subject | Lead | Page |
|--|---|----------------------|-----------|
| 1. | Welcome and Apologies | Mr J Muir | |
| 2. | Declarations of Interest <ul style="list-style-type: none">In relation to any agenda itemIn relation to any activity since the last formal meetingIn relation to any forthcoming activity | Mr J Muir | |
| 3. | Notes of Last Meeting | | 5 - 12 |
| Strategic Development | | | |
| 4. | Strategic Economic Plan Update | Mr Felix Kumi-Ampofo | 13 - 30 |
| 5. | SCR Draft Energy Strategy | Mr Colin Blackburn | 31 - 108 |
| Governance | | | |
| 6. | Local Growth Fund and Programme Demand | Ms Sue Sykes | |
| 7. | Local Growth Fund Programme Update | Ms Sue Sykes | |
| 8. | Budget Update | Noel O'Neill | 109 - 114 |
| For Information | | | |
| 9. | Mayoral Update | | 115 - 116 |
| 10. | Chief Executive's Update | | 117 - 118 |
| Date of next meeting: Thursday, 5 March 2020 at 11.00 am At: 11 Broad Street West, Sheffield S1 2BQ | | | |

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SCR - LOCAL ENTERPRISE PARTNERSHIP

MINUTES OF THE MEETING HELD ON:

MONDAY, 4 NOVEMBER 2019 AT 10.30 AM

11 BROAD STREET WEST, SHEFFIELD S1 2BQ



Present:

| | |
|------------------------------------|-------------------------------------|
| James Muir (Chair) | Private Sector Member |
| Nigel Brewster (Vice-Chair) | Private Sector |
| Lucy Nickson (Vice-Chair) | Private Sector LEP Board Member |
| Laura Bennett | Private Sector LEP Board Member |
| Professor Chris Husbands | Representative for Higher Education |
| Peter Kennan | Private Sector LEP Board Member |
| Tanwer Khan | Private Sector LEP Board Member |
| Richard Stubbs | Private Sector LEP Board Member |
| Councillor Chris Read | Rotherham MBC |
| Mayor Dan Jarvis | SCR Mayoral Combined Authority |
| Councillor Julie Dore | Sheffield City Council |
| Mayor Ros Jones | Doncaster MBC |
| Councillor Sir Steve Houghton CBE | Barnsley MBC |
| Professor Dave Petley | University of Sheffield |
| Councillor Chris Furness (Reserve) | Derbyshire Dales DC |
| Councillor Nick Clarke (Reserve) | Bolsover District Council |

Officers in Attendance:

| | | |
|-----------------|---|------------------------|
| Dr Dave Smith | Chief Executive | SCR Executive Team |
| Dr Ruth Adams | Deputy Chief Executive | SCR Executive Team |
| Mike Thomas | Senior Finance Manager | SCR Executive Team |
| Mark Lynam | Director of Programme Commissioning | SCR Executive Team |
| John Mothersole | Chief Executive of Sheffield City Council | Sheffield City Council |
| Paul Woodcock | Director of Planning and Regeneration | Rotherham MBC |

Guests in Attendance

Craig Tyler (Minute Taker)

Apologies:

| | |
|-------------------------|---------------------------------|
| Alexa Greaves | Private Sector LEP Board Member |
| Neil MacDonald | Private Sector LEP Board Member |
| Owen Michaelson | Private Sector LEP Board Member |
| Julia Muir | Private Sector LEP Board Member |
| Councillor Garry Purdy | Derbyshire Dales DC |
| Councillor Tricia Gilby | Chesterfield BC |
| Alison Kinna | Co-opted Private Sector Member |
| Bill Adams | TUC Representative |

1 **Welcome and Apologies**

The Chair welcomed Prof. Dave Petley as the representative of the University of Sheffield and thanked Prof. Koen Lamberts for his past support for the Board. Prof. Petley informed members of where his professional academic engagements would synergise with and support the work of the Board.

Dave informed the Board that Philippa Sanderson had stood down with immediate effect following her employer, KPMG's, change of employment rules meaning partners can no longer sit as members of LEP Boards. The Chair thanked Philippa for her past support of the Board and noted the SCR would continue to work with her in other capacities supportive of the delivery and execution of the SEP.

2 **Declarations of Interest**

Cllr Read recorded a non-pecuniary interest in respect of the matters to be considered at item 6 (LGF scheme acceptance) by virtue of being Leader of the sponsoring authority for the scheme under consideration.

No further declarations were recorded.

3 **Notes of previous meeting**

The minutes of the previous meeting held on 9th September were agreed to be an accurate record.

4 **LEP Geography Implications**

A report was received to set out the process required to formalise the withdrawal of the District Councils with effect from the 1st April 2020 and the implications on LEP Board membership. This report also presented a revised draft of the Collaboration Framework with D2N2 LEP for consideration and agreement.

It was noted all transitional processes are predicated on their being no detriment to the non-Constituent district councils

Cllr Furness reiterated the Derbyshire Dales DC's strong objection to being forced to leave SCR suggesting the district felt much stronger as part of the overlap.

Cllr Dore sought further clarification regarding the public-private and gender balance ambitions. It was confirmed the gender reference of 33% reflects the current balance but our ambition should be 50/50. Regarding the public-private split, it was noted the report, as presented, again reflects the current position but the policy remains to comply wholly with the proportionality determined by the LEP review.

Regarding the LGF programme, Cllr Dore requested clarity regarding what the new LEP membership arrangements will mean for schemes outside the SCR

constituent area. The Chair highlighted the need to 'co-manage' schemes already in contract and the need to work closely with D2N2 colleagues with regard to transitional arrangements.

It was confirmed the SCR will not be funding any schemes that are not in contract (signed) with the SCR before 1st April 2020.

Cllr Dore highlighted the need for the LEP Board to continue to be instrumental in determining which schemes come to fruition and remain informed of what outputs are being achieved for SCR-funded LGF schemes. It was suggested the Executive Boards could take a stronger lead in ensuring the LEP's interests are represented as potential schemes emerge.

RESOLVED, that the Board:

1. Notes the process required to formalise the withdrawal of the District Councils with effect from the 1st April 2020, the impact on the current balance of membership and implications for the Thematic Boards

Approves the draft Collaboration Framework with D2N2 LEP.

5 **SEP/LIS including thematic priorities discussion**

A report and presentation were received to provide an update on SEP/LIS development

Members received an update on the vision, strategic ambitions, underpinning principles, core narrative and emerging broad policy areas and were provided with an early view of the draft SEP.

Further information was provided in respect of the actions contained within the term 'underpinning principles', noting where these are aligned with skills and employability to support growth, transport and mobility, infrastructure and digital technology, housing, and culture and place.

Mayor Jones questioned the extent to which the plan has been developed with other key strategic partners and asked whether the impact of an aging population has been captured, particularly in respect of the transport and mobility priorities.

Examples were provided for where the health sector has been readily engaged with helping to develop the SEP and to also recognise where the SEP is instrumental in supporting the ambitions of the health and integrated care sector, such as in respect of that sector's ambition for increasing care in the community.

Cllr Houghton suggested the Plan needs to be written mindful of not being so all encompassing that it becomes less relevant to localised communities and loses focus on those communities' need to benefit economically from the SEP. Members asserted the importance of ensuring the Plan clearly links to communities and individuals.

Cllr Read expressed concern that the housing priorities aren't yet clear enough and agreed with other members that the current draft is too 'abstract', devoid of specifics and not yet embedded in the realities of what tangible benefits South Yorkshire's communities need to experience.

Members acknowledged the quandary of the Plan needing to be driven 'top-down and 'bottom-up' and discussed the need to determine which priorities are the remit of the SCR and which are the remit of the local authorities or other strategic agencies. It was agreed the reality is that the Plan needs to be multi-layered and requiring of effective ideas and leadership at every level.

The Chair requested this ideology be weaved into the central narrative of the SEP vision.

Regarding housing, it was noted the recent Housing Board heard representations from Housing Association leads in respect of how they would like to help shape and support the SEP.

Prof. Husbands suggested the Plan needs to be crystal clear in respect of what strategic choices are being taken (and consequently which aren't) to help justify the narrative.

6 **LGF Scheme Acceptance**

A report was received requesting the Board accepts a project (Project Chorus) onto the LGF Programme in order to develop a Full Business Case for further consideration.

It was noted the report is not a request for funding approval, as any such decision would be taken by the MCA.

The report noted Project Chorus is a company who are initially seeking to establish a research and development facility to develop the next generation of antennae for satellite control systems. This will create c358 mostly high value jobs. A second phase will establish a manufacturing facility in the city region, creating a wide range of additional jobs.

It was noted the total value of the R&D phase is £18m with a LGF grant requested of £8m and if approved by the LEP onto the programme (and the MCA in respect of whether it is agreed to allocate funding), the company has identified temporary premises and could commence operations in the city region as early as January 2020.

It was noted this investment has been assessed at the strategic case and represents good value for money this will be enhanced when the manufacturing facility is delivered.

Members questioned the relationship between the 2 phases and whether agreeing phase 1 ties the SCR into approving phase 2 at some stage.

Mayor Jones highlighted the information to be presented at item 7 noting we currently have to manage a significant over-programming situation. Members

were reminded the decision being sought today is just in respect of whether to include this project in the notional programme, with the MCA to determine whether this scheme will ultimately receive funding in the context of the other schemes vying for LGF awards.

Further information was provided to explain and support the potential significance of this scheme.

Mayor Jones suggested the LGF overprogramming position should have been considered prior to considering the acceptance of this scheme onto the programme and recommendation to the MCA.

RESOLVED, that the Board approves 'Project Chorus' onto the LGF pipeline Programme.

7 **LGF Programme Update**

A report was received to provide the LEP Board with an update on the review of the current LGF programme commitments and the scale of projects in the over-programmed pipeline.

Members were reminded the LEP Board in September considered a range of options to address the over programming position and agreed to scheme promoters self-evaluating the deliverability of schemes within the funded window (to March 2021) and nominate schemes to defer or remove from the programme, SCR seeking opportunities to find additional resource (e.g. consider decommitting uncontracted elements from the programme, legacy Growing Places Funding, housing fund allocations etc.) and the undertaking of a LEP prioritisation process following the actions 1 and 2 if there remains an over programmed position

It was noted scheme promoters were therefore asked to complete and return self-evaluations for projects in the pipeline but not yet approved, projects approved but not yet in contract and projects in delivery but likely to underclaim.

It was noted the over-programmed figure is therefore £46.5m, against a total available programme of £377.6m and the commitment headroom is £9.4m (subject to pending decisions being taken at the forthcoming MCA). It was noted further diligence will be taken in respect of the best usage of the current commitment headroom.

RESOLVED, that the Board:

1. Notes the review of the LGF programme and current pipeline position following the self-assessment
2. Agrees the steps to be undertaken, including the utilisation of the £8m Growing Places Fund to increase the available headroom for the pipeline, the identification of further programme withdrawals for schemes that cannot meet the conditions of the funding approval and to undertake further prioritisation of the pipeline

3. Prioritises the remaining balance of £9.4m to support inward investment schemes, noting this prioritisation to be regularly reviewed based upon changes in the available headroom.

8 **Budget Update**

A report was received to provide an update on the progress made in identifying savings options to achieve a reduction in the 2019/20 LEP and MCA core budget.

Cllr Dore requested a separate budget meeting be convened for Leaders ahead of the MCA meeting (at which the budget will be presented for approval), to ensure Leaders have been able to influence the budget's development. The Chair asked that the private sector be represented at that workshop and asked Nigel Brewster to attend.

Action: Mike to revise the budget development timetable and make arrangements for the additional workshop.

RESOLVED, that the Board notes the progress to date in seeking to achieve a significant budget reduction in 2020/21

9 **Future Mobility**

A report was received inviting consideration of the business growth opportunities for the Sheffield City Region arising from technology and innovation in the transport sector.

Considering how the findings of the Future Mobility study should be taken forward, it was proposed a specific forum of members and officers (supported by colleagues from the Universities and the National College for High Speed Rail) be convened to look at the options in more detail.

Members considered the 37 points contained within the report and discussed whether the ownership of any of these points is wider than or lies outside the remit of the SCR.

Members questioned whether the spectrum of points contained within the report is currently too broad (noting this overlaps with the SCR Transport Strategy and its implementation plans).

It was suggested there is a need to determine what is important to us and prioritise those points.

It was suggested the role of future mobility awareness will be to help 'nudge' the actions contained within the implementation plans to ensure we are maximising the benefit of future technologies as our plans for future public mobility emerge.

RESOLVED that the Board notes the findings of recent research into Future Mobility services in the Sheffield City Region and agrees to support the creation

of a 'forum' (including the representation of officers from the local authorities) to consider the future mobility opportunities in more detail.

10 **Mayoral Update**

Received for information.

Prof. Husbands noted the Working Win pilot had come to an end but the results won't be reported for up to 2 years. It was noted this was because the referral window had now closed but the programme is extended for a further year. As a medical ethics trial the government will be undertaking the assessment.

11 **Chief Executive's Update**

Received for information.

12 **Any Other Business**

No further matters requested.

I, the undersigned, confirm that this is a true and accurate record of the meeting.

Signed

Name

Position

Date

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16th January 2020

Update: Strategic Economic Plan

Purpose of Report

This report provides LEP Board members with an update on the progress of the SEP following discussions at previous LEP Board meetings. Members will be provided with an overview of the document's contents and receive a presentation of a draft of the document.

Thematic Priority

Cross Cutting - Policy

Freedom of Information

This paper will be available under the SCR Publication Scheme.

Recommendations

The Board is asked to:

- Offer feedback on the draft SEP when it is circulated.
- Delegate the sign-off of the draft SEP for consultation to the Mayor, LEP Chair and SCR Chief Executive following circulation of a draft SEP after the meeting and time for comments. This will ensure the consultation can commence in advance of the March 2020 meeting.

1. Introduction

- 1.1** The Strategic Economic Plan (SEP) will be an overarching strategy which will set out how to grow the economy in a way that better includes and benefits all communities across SCR and improves our natural capital.
- 1.2** This paper outlines progress since the previous LEP Board meeting and subsequent engagement with individuals and organisations, the contents of the SEP, the process, next steps, and timescales.

2. Proposal and justification

- 2.1** Our ambition and purpose are to transform the lives and wellbeing of our people. The agreed vision provides three policy objectives for the City Region: founded on economic growth, social inclusion, and environmental sustainability. The primary lens of the SEP will be growth, but this will not be at any cost – it must be inclusive and environmentally sustainable. Growth will not be beneficial unless all people have an opportunity to contribute and benefit from it, and it cannot be detrimental to the environment. Rather, it must enhance it wherever possible.
- 2.2** Following the LEP Board meeting in November, further work has been undertaken to respond to feedback and continue to develop the draft document. A presentation (provided in Annex 1) will be given to the meeting to set out draft contents and you will

have an opportunity during and after the meeting to offer your views. The contents of the document are:

1. Evidence summary
2. Vision
3. Growth, Innovation and Enterprise
4. Skills and Employment
5. Sustainable Transport and Mobility
6. Digital Connectivity
7. Environment & sustainability
8. Land Assets
9. Place
10. Outcomes, Benefits and Financial Implications

The presentation will provide more detail but the below summarises the content:

- Section 1 offers an overview of the evidence, the conclusions of which have defined the challenge and led to the agreed vision.
- Section 2 sets out the three policy objectives of growth, inclusion and sustainability and explains how growth must be inclusive and supportive of the environment.
- Section 3 outlines how SCR's innovation-led growth will be delivered.
- Sections 4-8 present the key enablers necessary to ensure we have the right conditions to facilitate this growth.
- Section 9 will anchor the strategy in our "places" and show the uniqueness and the contribution of each local authority in the SCR. Section 10 explains the people-focused outcomes, benefits and financial implication of the SEP.

The presentation at the LEP Board meeting will explain each of these sections in more detail.

2.3 Board Members are invited provide feedback on the presentation. There will be an opportunity for more detailed feedback on the SEP document after the meeting.

2.4 Next steps and timescales

- A draft will be sent to Board members after the meeting (Friday 17th January). Stakeholders will have one week to feed back and the revised draft will be produced following comments and used for the public consultation.
- Our intention is to undertake a four-week consultation (w/c 27th January)
- The next LEP board (3rd March) will be presented with a paper which will summarise issues from the consultation.
- The final paper will be produced after the 3rd March LEP Board. There will be a comment window for two weeks and then the final SEP will be included for the May LEP Board papers.

In order to meet these timescales, we request delegated authority for the sign-off of the draft document (after it has been revised to reflect your comments) for consultation to the LEP Chair, the Mayor and the Chief Executive.

3. Consideration of alternative approaches

3.1 We could have chosen not to produce a SEP or followed a different economic growth model. The document is aligning different views on growth and a refreshed vision and approach with which to engage with each other, with central government and to secure the funding needed to accelerate the growth of our economy and transform the lives of our people.

4. Implications

4.1 Financial

The SEP will help to secure additional funding from Government; for example, the UK Shared Prosperity Fund. The costs associated with the completion of the SEP including specific commissioned pieces of research have been accounted for within the existing approved budget.

4.2 Legal

There are no legal implications to this paper.

4.3 Risk Management

If the work is delayed, the SCR's ability to secure additional funding from the new Government would likely be weakened. The SCR Executive Team are aware of the importance of delivering a new Economic Plan for the SCR in order to have a compelling pitch to Government. To manage this, consultants were appointed to help mitigate the risk of delay.

4.4 Equality, Diversity and Social Inclusion

Inclusive growth is one of the three pillars of the document. The strategy considers offering opportunities where this is not available or where particular barriers are preventing residents from accessing opportunities.

5. Communications

5.1 The document has benefited from the wide engagement we have undertaken. To date universities, businesses, charities, local authority officers and senior executives have been engaged on evidence gathering and messaging. We have also received specialist input into the document from expert professors and from innovation experts from the private sector, as well as substantive input from the local authorities. BEIS and HMCLG have been engaged as well. We intend to continue this engagement and we will work closely with partners in Chesterfield, North East Derbyshire, Bolsover, Bassetlaw and Derbyshire Dales, who though leaving the LEP area, will continue to be a key part of our functional economic area.

5.2 A strategic communications plan for the SEP is in draft and will inform the messaging, tactics and communications channels we use to engage with businesses, stakeholders and members of the public. This plan will also set out the communications strategy for the public consultation, which we intend to begin in the spring.

6. Appendices/Annexes

6.1 Annex 1 – SEP Presentation

| | |
|----------------------|---|
| REPORT AUTHOR | Paul Johnson |
| POST | Senior Economic Policy Manager |
| Officer responsible | Felix Kumi-Ampofo |
| Organisation | Sheffield City Region |
| Email | Felix.Kumi-Ampofo@Sheffieldcityregion.org.uk |
| Telephone | T: 0114 220 3441 |

Background papers used in the preparation of this report are available for inspection at: 11 Broad Street West, Sheffield S1 2BQ

Other sources and references: Strategic Economic Plan Evidence Base – 2019 (Summary Evidence Pack) and other relevant documents available on the website:

<https://sheffieldcityregion.org.uk/explore/resources/>

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STRATEGIC ECONOMIC PLAN

Dr Dave Smith, Chief Executive

Sheffield
City Region

VISION

“SCR will build on our innovation heritage, to create a growing, inclusive and sustainable economy, playing an ever-increasing role in UK prosperity, and at the vanguard of the UK’s 4th Industrial Revolution, in order to transform the lives of all our people”

Growth

Inclusion

Sustainability

NEW WAYS OF WORKING

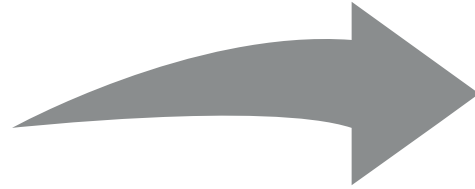
- All partners acting at the **appropriate spatial level**
- Acting jointly & presenting a **unified position** externally, always
- Leading & owning the solutions to the **grand challenges** we face
- Ensuring **growth is not at any cost** - it has to be inclusive and must take account of environmental goals



What is changing.....

Lessons learnt:

- Jobs & GVA
- Spreading “jam” too thin
- Grant culture
- Reactive commissioning



New Strategy:

- Quality, inclusion, prosperity & opportunity and place
- Few big things well
- Relationship building
- Systemic
- Innovation at the forefront

Strategic Context



VISION

Growth

Achieve a GVA increase by 2040, underpinned by productivity growth which exceeds the UK average

Page 22

To foster innovation at all levels and at an industrial scale to grow productivity and secure prosperity, we will:

- ❑ Actively proliferate innovation clusters across SCR;
- ❑ Exploit our core capabilities and invest in complementary new pathways so business invest, innovate and scale up here;
- ❑ Stimulate our businesses through market opportunity-led supply chain positioning and networking;
- ❑ Ensure that our new terms of business is encapsulated in a social contract which locks in inclusion and sustainability.

Inclusion

Unlock prosperity by eliminating the wage gap and health inequalities between SCR and the national average

To ensure that everyone has a fair opportunity to contribute to and benefit from prosperity, we will:

- ❑ Consider growth as a means to achieve shared prosperity rather than as an end in itself;
- ❑ Align social, health and economic policy wherever possible;
- ❑ Deliver demand and supply side interventions to create more and better jobs, and equip our people with the skills and mindset to be successful;
- ❑ Agree a truly city region approach to delivery, with all partners.

Sustainability

Drive forward environmental sustainability to achieve our net zero-carbon target by 2040

To ensure a successful transition to a net-zero carbon economy, we will:

- ❑ Support businesses to reduce emissions;
- ❑ Drive a low carbon economy, wherever appropriate.
- ❑ Adapt and enhance resilience to our changing climate
- ❑ Invest in net-zero carbon energy options for domestic and industrial uses;
- ❑ Grow environmental sector and opportunities therein;
- ❑ Invest in sustainable connectivity opportunities (e.g. digital, electrification, modal shift and unmanned vehicles) to reduce emissions.

INNOVATION AS A GROWTH DRIVER

- Establish city region-wide Global Innovation Network
 - Areas/Hubs across the city region
 - Place-based
 - Market opportunity-led
 - Building on existing capabilities and competitive advantage
- Supply chain positioning and networking.
- Industrial scale R&D/innovation commercialisation.
- “Stimulating” our economic potential and investing in businesses ready for scale-up.
- Social contract and terms of business.

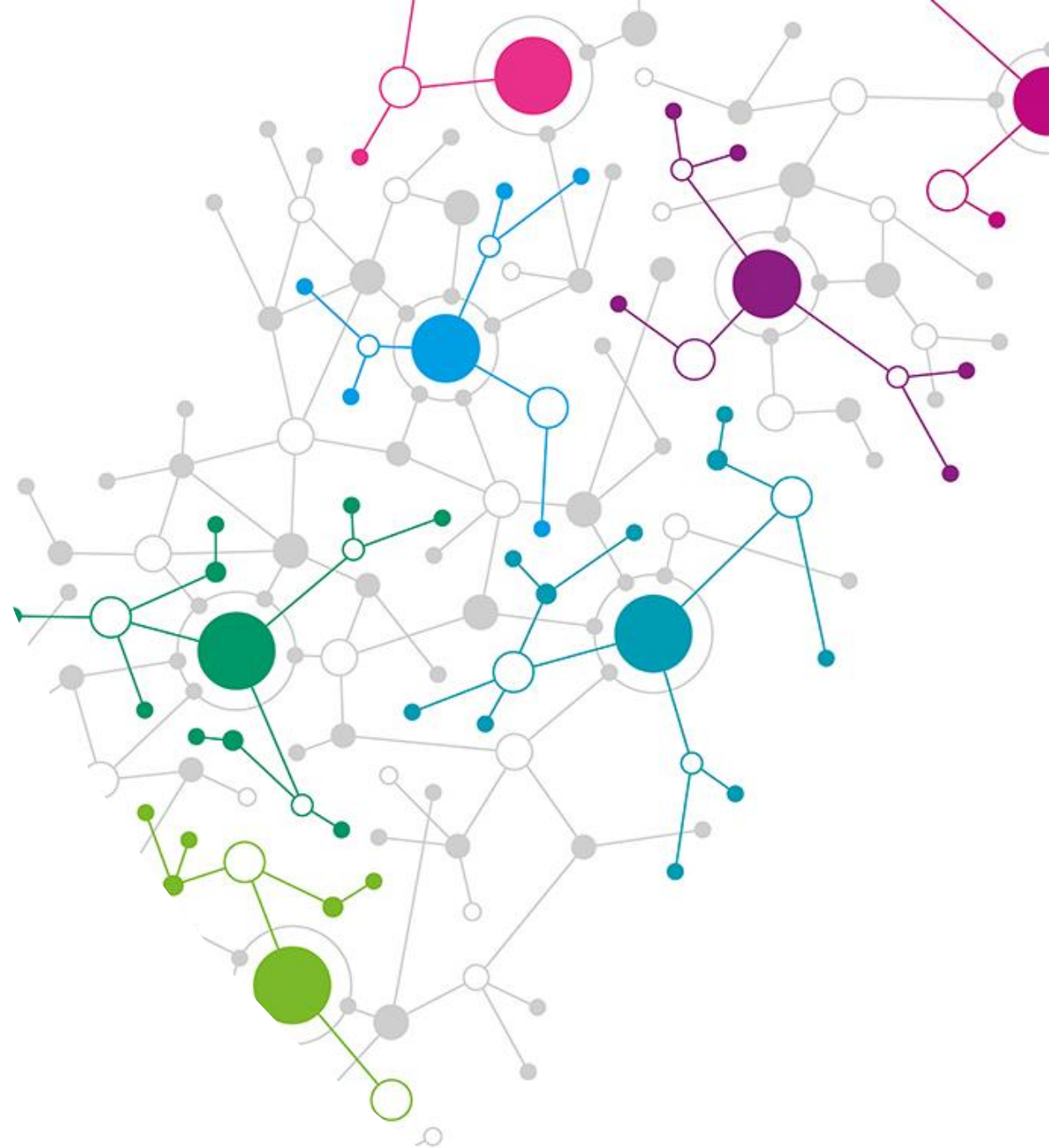
SCR GLOBAL INNOVATION NETWORK

Evidence based capabilities

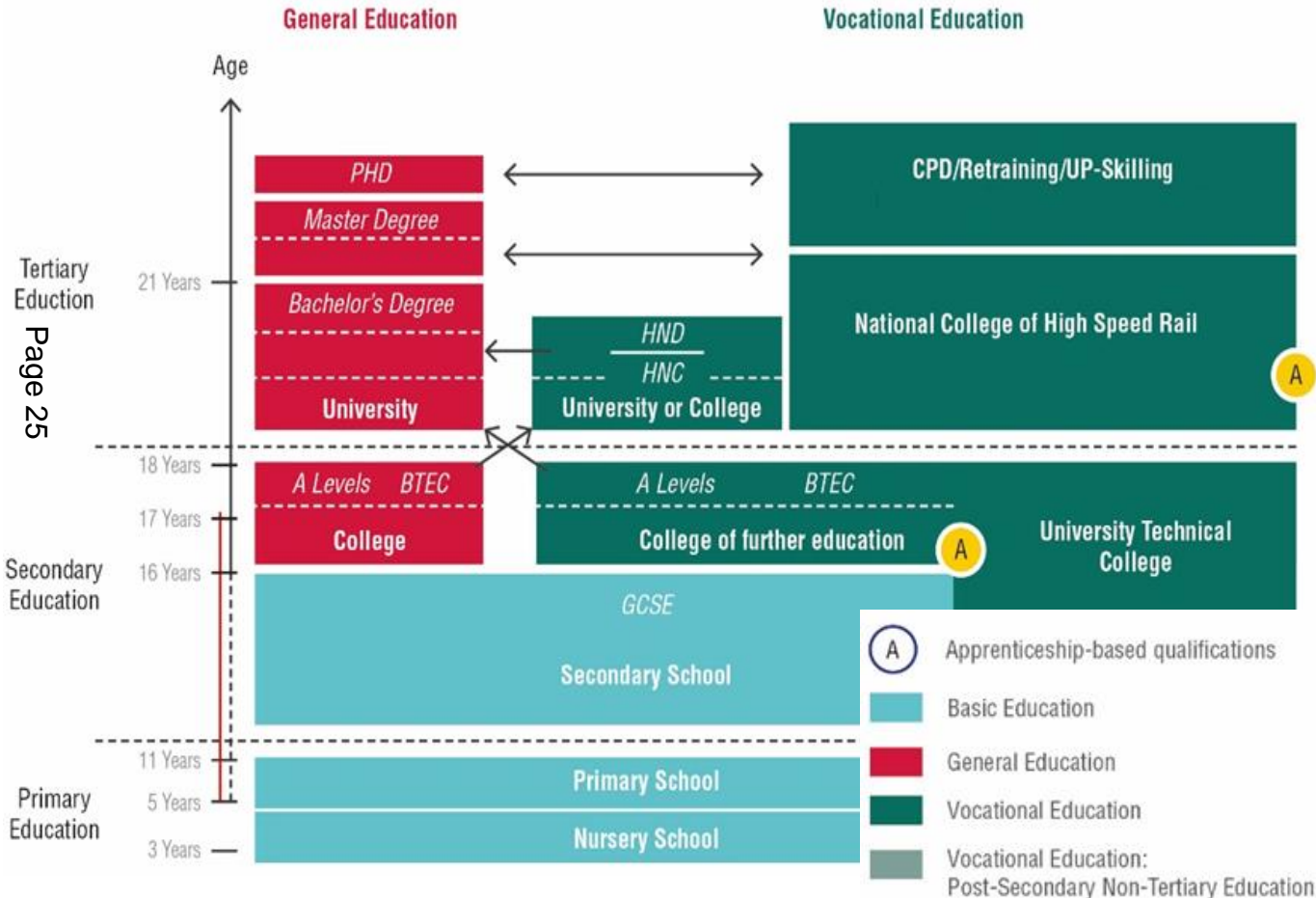
- Doncaster: Logistics, Rail and Materials
- Barnsley: Construction & Materials
- Rotherham Construction & Manufacturing
- Rotherham/Sheffield: AMID, Energy, Precision Engineering, Materials
- Sheffield City Centre: Digital, Education and Services

Aspirational/emerging

- Barnsley: Low Carbon, Future Mobility and Digital
- Doncaster: Future Mobility, Low Carbon and Creative
- Sheffield: Health, Low Carbon and Professional Services



SKILLS & EMPLOYMENT



Supply side

1. Develop a world-class technical education system
2. Drive up workforce skills
3. Enable all residents to access (re)training & support
4. Invest in outstanding and wider learning experiences for all young people

Demand side

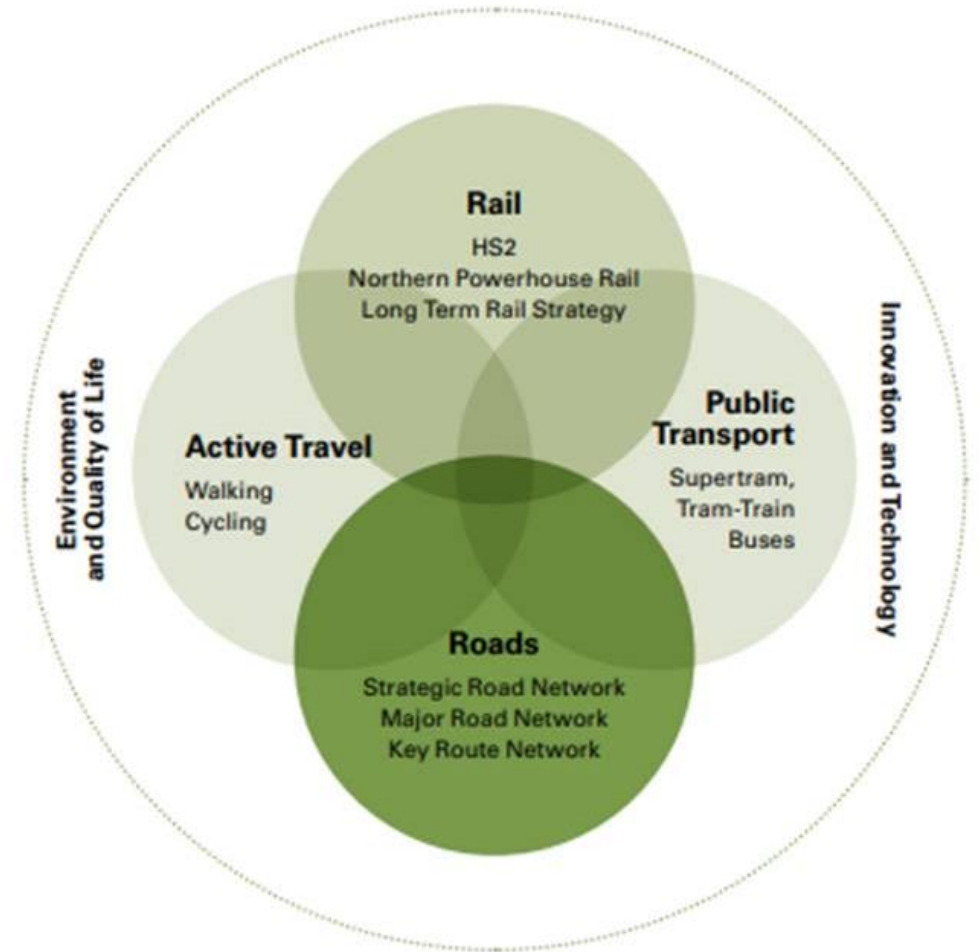
Secure commitment from SCR businesses for workforce development – incentivise businesses to be good employers (through an Employers Charter, procurement framework, extending Skills Bank)

System level

Maximise opportunities for a system-wide approach to lifelong learning

SUSTAINABLE TRANSPORT & MOBILITY

- Enhance the decision making (e.g. social value, environmental impact)
- Wider impact (e.g. linkages to other areas)
- Public Transport (e.g. bus review and Transport poverty)
- Alternative fuels
- Trials (e.g. demand-responsive transport)
- Intelligent Mobility
- Active Travel



Measuring success:

Neighbourhood
to Regional Hub

15
MINS

Regional Hub
to Regional Hub

30
MINS

Regional Hub to
Major Centres

75
MINS

LAND ASSETS & BUILT ENVIRONMENT

- Develop the Global Innovation Network and establish SCR as one of the best places in the UK to start up, develop and grow businesses.
- Develop the right industrial and commercial sites and premises, in the right locations to support economic growth in all parts of SCR.
- Ensure that SCR's urban centres are quality places where people choose to live, work and relax.
- Be at the heart of a thriving Northern England, a distinctive place with a strong offer of sites across our city and towns.
- Do all the above sensitively and responsibly to protect and enhance our environment



REST OF DOCUMENT

Clean energy: Links to the forthcoming energy strategy.

Digital: Infrastructure, skills, inclusion, sector growth and innovation.

Place: In development...

Outcomes, benefits and Impact: Soon to be procured.

THANK YOU

economy@sheffieldcityregion.org.uk

[W: sheffieldcityregion.org.uk](http://www.sheffieldcityregion.org.uk)

Sheffield City Region
11 Broad Street West
Sheffield
United Kingdom
S1 2BQ

Sheffield
City Region

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16th January 2020**SCR DRAFT ENERGY STRATEGY****Purpose of Report**

This report presents the revised draft SCR Energy Strategy taking into account the steer and comments of the SCR Infrastructure Board.

Thematic Priority

This report relates to the following Strategic Economic Plan priorities:

- Secure investment in infrastructure where it will do most to support growth.
- Facilitate and proactively support growth amongst existing firms.

Freedom of Information

The paper will be available under the Combined Authority Publication Scheme.

Recommendations

The Board is asked to comment on and endorse the draft SCR Energy Strategy.

1. Introduction

- 1.1** The development of the Sheffield City Region (SCR) Energy Strategy is part of a wider strategy for environmental sustainability. Initial work in 2018 involved developing the Economic Base (Phase 1) and an Energy Technology Appraisal (Phase 2) to provide a robust baseline for the Strategy, which was followed by commissioning The Carbon Trust to support preparation of an initial Draft Strategy. Through 2019, work on developing the Draft Strategy has been twin-tracked with the work on the emerging SCR Strategic Economic Plan (SEP) in order to ensure alignment with the SEP and SCR Transport Strategy, and emerging thinking related to the Global Climate Crisis.
- 1.2** The Strategy has therefore evolved significantly over the past 12-18 months, with each stage and draft version of the Strategy being overseen by the SCR Infrastructure Board (and the SCR Housing and Infrastructure Executive Board prior to April 2019). Further, a Stakeholder Group comprising of around 50 organisations and individuals has contributed to each stage of the preparation process, and the University of Sheffield also undertook a 'Provocation' exercise on the draft Strategy which has also informed the revised Draft version.
- 1.3** The Draft SCR Energy Strategy is attached at Appendix 1 for the consideration by the LEP Board, and the presentation (Appendix 2) will be given to highlight the key elements of the Strategy. It will also be reported to the MCA on the 27th January for agreement.

- 1.4 The SCR Infrastructure Board will be considering this latest version of the Draft Strategy at its meeting on the 9th January (after these papers have been circulated), and any comments from the Infrastructure Board will be reported verbally.

2. Proposal and Justification

2.1 Climate Emergency

On 9th November 2019 the MCA declared a 'Climate and Environmental Emergency,' which stated clearly that the effects of anthropogenic climate change have been noted and that the MCA pledges to take immediate and dramatic action to help to mitigate the potential consequences. These consequences include the threat of increased regularity and severity of flooding within South Yorkshire. The SCR Energy Strategy has a significant part to play through its high-level strategy for energy resilience and the move towards a low carbon future, in helping address this climate emergency.

2.2 SCR Energy Strategy

The SCR Energy Strategy will sit within a suite of documents that will provide an overarching strategic framework to both tackle Climate Change and support the transition to a clean energy and low carbon economy. It has been developed with the help of a range of stakeholders across the region and beyond including the Carbon Trust, ITM Power, Liberty Steel, Northern Powergrid, the University of Sheffield, City Region local authorities, and Government amongst others. Through 2019 the preparation process has involved:

- **Strengthening of the evidence base:** A significant review and update of the evidence base, which has both included utilising the latest statistics, and focussing data and analysis on South Yorkshire rather than the wider SCR to reflect both the revised LEP geography from April 2020, and the carbon target and scenarios geography.
- **Clearer approach:** A restructure giving more focus to those areas that SCR have greatest influence over and those that can have the greatest impacts, and amending the policy areas and interventions accordingly. The details of other related areas will be covered in the wider suite of documents providing a holistic approach to addressing the Climate Emergency.
- **Stakeholder Engagement:** In September 2019 a second workshop was held with approximately 45 stakeholders to discuss an early draft of the Strategy, and further discussions on specific issues with specialists such as the local Universities, and the South Yorkshire Hydrogen Network have also taken place.
- **Consistency with the SEP:** Working closely with the SCR policy teams in their development of the SEP to ensure that the evidence base for energy is complete and up-to-date; highlighting areas of opportunity and focussed economic growth links. Sustainability has become one of three key pillars of the emerging new SEP.
- **University of Sheffield 'Provocation Exercise':** Academics and PhD students at the University of Sheffield scrutinised the evidence and assumptions within the Draft SCR Energy Strategy using different sources and methods. This then plugged any gaps in the evidence base or reinforced the evidence already given.
- **Carbon Targets & Future Scenarios:** The consultant 'Ricardo Energy and Environment' was appointed in Summer 2019 to carry out analysis in three phases:
 - **Phase 1:** To produce a top-down science-based carbon budget for South Yorkshire which is aligned to the UNFCCC Paris Agreement target. The SCATTER (Setting City Area Targets and Trajectories for Emissions

Reduction) tool was specified to ensure that the method was the same as that followed by local authority partners.

- **Phase 2:** A bottom-up approach assessing the contribution of a number of 'tangible and measurable targets' to inform possible future scenarios with differing levels of ambition from the minimum to meet any legal requirements, to higher levels of ambition which assume actions to accelerate carbon reduction and stay within the overarching carbon budget to be set.
- **Phase 3:** Each of the future scenarios has been assessed in terms of the likely capital investment required to achieve the target; the expected GVA growth; and the number of jobs and/or total person-years of employment associated.

2.3 The outputs and proposals from the Carbon Targets and Future Scenarios commission are incorporated within the Draft Strategy.

3. Consideration of alternative approaches

3.1 The preparation of the Strategy involved several consultants at different stages, and a range of evidence and different options, approaches, objectives, vision etc which have been informed through consultation with key Stakeholders over the past 18 months. At every stage the evidence base and draft proposals and different versions of the Strategy have also been considered and guided by the SCR Infrastructure Board, and previously the SCR Housing and Infrastructure Board.

3.2 The comments and suggestions on the Draft Strategy by both the University of Sheffield and the Stakeholders have further informed revisions to the content and approaches of the Strategy prior to it being finalised in its current draft form; as well as the Targets and Future Scenarios commission.

4. Implications

4.1 Financial

This work is supported by £40k from BEIS with a further £30k allocated from SCR funds. This budget was sufficient to complete the Strategy and undertake the Carbon Targets and Scenarios work. Further support from BEIS (£100k) was also secured for additional capacity to lead on Energy and Sustainability activity within the SCR Executive. The post is hosted by SCR and works alongside local authority officers across South Yorkshire as well as regionally through the North East, Yorkshire and Humber Energy Hub.

4.2 Legal

A Memorandum of Understanding has been agreed with BEIS related to their funding contribution to support the preparation of the Strategy.

4.3 Risk Management

Risk assessment has been undertaken for the project and is continually monitored.

4.4 Equality, Diversity and Social Inclusion

None arising from this report. The SCR Energy Strategy will help to address fuel poverty and the health and wellbeing of the local populations and, therefore, will contribute to improving social inclusion.

5. Communication

5.1 Proactive communications will be delivered across a range of channels, including digital, social and traditional media, once the Energy Strategy is in a position to be published.

6. Appendices/Annexes

Appendix 1 – Final Draft SCR Energy Strategy

Appendix 2 – SCR Energy Strategy Presentation

| | |
|----------------------|--|
| REPORT AUTHOR | Karl Sample |
| POST | Senior Programme Manager (Energy & Sustainability) |
| Director responsible | Mark Lynam, |
| Email | Mark.Lynam@sheffieldcityregion.org.uk |
| Telephone | 0114 220 3445 |

Background papers used in the preparation of this report are available for inspection at: 11 Broad Street West, Sheffield S1 2BQ. Other sources and references: N/A.

SHEFFIELD CITY REGION DRAFT ENERGY STRATEGY



Green Heart of Great Britain

Sheffield
City Region

SHEFFIELD CITY REGION (SCR)

Geography

<<Insert text>>



Local Enterprise Partnership

<<Insert text>>

Mayoral Combined Authority

<<Insert text>>

Our Economy

The economy in South Yorkshire is not dominated by a single sector or type of industry. Instead there is a diverse base which includes advanced manufacturing, high performance materials, transport and logistics as well as significant business services; all benefitting from close links to two world-class Universities and an enterprising public sector. Yet, within South Yorkshire the productivity levels and wages are low, employment rates and entrepreneurship are below the national average, and growth is slow¹.

The refreshed Strategic Economic Plan (SEP) focusses on ways to improve this picture including taking advantage of those sectors which offer increased growth and productivity. Productivity has several drivers including quality of infrastructure, business growth and innovation expenditure. Furthermore, too many of our citizens are distant from the labour market, not in employment or training, are experiencing poor physical or mental health, and have low or no skills to help them get better jobs. Addressing productivity, therefore, will require intelligent investments in high-quality and innovative sectors like the low carbon energy sector, which is highly productive, and can contribute to South Yorkshire's productivity challenge.

¹ Sheffield City Region – Economic Evidence Base (2019) [LINK](#); Accessed: [DATE](#)

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LEP BOARD CHAIR & MAYORAL FOREWORD

<< Insert foreword >>

EXECUTIVE SUMMARY

Vision

*For South Yorkshire to be recognised as the
'The Green Heart of Great Britain' with:*

A clean, efficient and resilient energy system, which supports a healthier environment for people to live, work and visit, and which drives our transition to a low carbon economy.

This SCR Energy Strategy sets out the vision, goals, policies and targets in support of the refreshed Strategic Economic Plan (SEP) and has been developed in collaboration with the Department for Business, Energy and Industrial Strategy (BEIS), local authority partners, and stakeholders from academia, business, industry, charity, community groups and members of the public. It provides a strategic framework to give confidence to businesses looking to invest in low carbon energy generation, energy infrastructure, and energy efficiency within South Yorkshire. Over the past 15 years our energy usage and carbon emissions have decreased steadily whilst our economy has grown. This shows that there is no longer a direct link between economic prosperity and reducing our impact on the planet (Figure X) – indeed, quite the opposite. The UK's low carbon economy is projected to grow 11% per year until 2030; four times faster than the growth of the UK economy as whole⁴ meaning that there are opportunities for our businesses and industry to take advantage of this market. Doing so will help create jobs, secure new investment, and grow our economy.

This SCR Energy Strategy also seeks to address aspects of social deprivation and health and well-being, and – perhaps most importantly – help to tackle the causes of anthropogenic⁵ climate change.

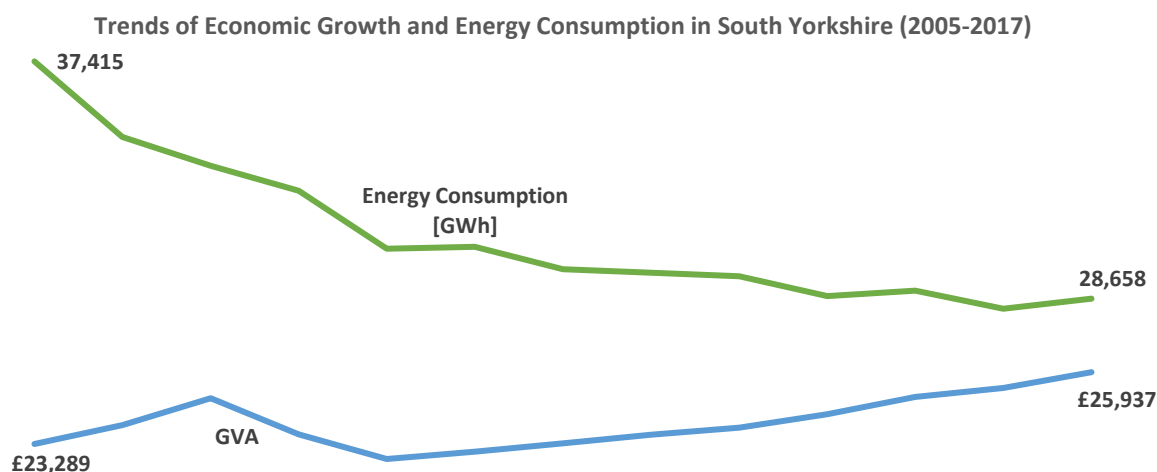


Figure X – The ‘decoupling’ of economic growth and energy consumption in South Yorkshire

⁴ BEIS – Clean Growth Strategy (2017) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf; Accessed: 17/12/2019)

⁵ Anthropogenic = from human activity

Our Vision will be achieved by meeting the following Goals:

1. **Drive clean growth and decarbonisation in our local businesses and industry whilst maintaining their competitiveness.**
2. **Promote investment and innovation in low carbon energy generation, distribution and storage.**
3. **Improve the energy efficiency and sustainability of our built environment and encourage communities to be part of the transition.**
4. **Accelerate the transition to ultra-low emission vehicles (ULEVs) and transport systems through modal shift and supporting infrastructure.**

In addition to these Goals, the public sector has a responsibility to lead by example. As such, an SCR Climate Action Plan will be developed to put SCR as an organisation on a path towards net-zero carbon as part of a wider SCR Sustainability Plan setting out how public and private sector bodies, and individuals can contribute.

To succeed, there are many challenges across South Yorkshire that need to be addressed including energy resilience and the current reliance on fossil fuels.

Energy Resilience & Clean Energy Transition

South Yorkshire generates far less electricity than it consumes and has an over reliance on the 'import' of energy as a whole. All of the 'traditional' fossil fuel electricity generation has been decommissioned in South Yorkshire leaving only low carbon generators. However, 83.5% of South Yorkshire's electricity is generated elsewhere and assuming that nationally 50% of this is low carbon, means that over 40% of the electricity consumed is still being generated using fossil fuels.

Although, the direction of travel is the move from fossil fuels such as coal and gas to renewables, as illustrated in the diagram below, fossil fuels will continue to play an important role in energy generation in the short-medium term through the transitional period, as other forms of renewable energy generators are developed and brought on stream. Similarly, it will be important that business competitiveness is not unduly impeded through this transitional period.



Figure X: The transition of electricity generation in the UK. The low carbon proportion of electricity generation increased to a record 50.1% in 2017 in contrast to coal whose share decreased to 6.7%.⁶













South Yorkshire is in a strong position to develop and implement solutions that will place clean growth and energy efficiency at the heart of our economy including the high-value manufacturing industry. There is an opportunity to build on local supply chains and strengths in logistics to become forerunners in this quickly accelerating market. The energy intensive sectors within South Yorkshire present a significant opportunity for transformational energy projects and innovative technologies, which will deliver increased productivity and significant cost savings that benefit the *bottom-line* of businesses. An example of this is the Government's Clean Steel Fund which will consider how hydrogen can be used to decarbonise the steel industry and reduce the reliance on imported natural gas.

⁶ Digest of UK Energy Statistics (DUKES) 2018 (2019)













(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/736148/DUKES_2018.pdf;

Accessed: 23/04/19)

Overview of Policies

| | | | |
|---------------------------------------|--|--|--|
| GOAL 1 – Business & Skills |  <p>Encourage Clean & Efficient Business Growth</p> <p>Support businesses to become more efficient and prosper from the high-growth of the low carbon energy sector.</p> |  <p>Train and Upskill the Energy Workforce</p> <p>Providing people with opportunity to gain the skills to design, install and maintain our future energy systems.</p> |  <p>Promote Industrial Decarbonisation</p> <p>Support industry to both remain competitive and decarbonise. Link to cluster schemes e.g. Zero Carbon Humber.</p> |
| GOAL 2 – Infrastructure |  <p>Utilise Current Infrastructure</p> <p>Make better use of our infrastructure for energy efficiency, low carbon energy generation, or sustainability.</p> |  <p>Enhance Energy Resilience</p> <p>Enable the innovation and addition of further generation capacity, storage and balancing technology. Future-proofing with smart technology.</p> |  <p>Drive Investment in Heat Decarbonisation</p> <p>Supporting the move to 4/5G heat networks, hydrogen for heat, and electrification of heat.</p> |
| GOAL 3 – Built Environment |  <p>Improve the Energy Efficiency of Existing Dwellings</p> <p>Improve the energy efficiency of the current housing stock to reduce costs and support our most vulnerable residents.</p> |  <p>Increase the Standard of New Build Dwellings</p> <p>Move towards all new-build dwellings having high levels of energy efficiency with EV charging points and smart technology.</p> |  <p>Enable Community Energy Schemes</p> <p>Work closely with community groups to develop and support community schemes across South Yorkshire.</p> |
| GOAL 4 – Transport |  <p>Inspire Modal Shift Towards Active Travel</p> <p>Promote and incentivise Active Travel where possible. Providing the infrastructure to allow the shift to happen.</p> |  <p>Deliver a Clean Transport Network</p> <p>Work with partners to ensure South Yorkshire moves to a zero-carbon transport network.</p> |  <p>Accelerate the Uptake of ULEVs</p> <p>Accelerate the transition to ultra-low emission vehicles and the roll-out of the required refuelling infrastructure.</p> |

Net-zero CO₂ emissions by 2040

| | | | |
|---------------------------------------|--|---|--|
| <p>GOAL 1 – Business & Skills</p> |  <ul style="list-style-type: none"> 90% of commercial lighting is LEDs by 2040. 1,500 jobs created in the low carbon and renewable energy sector by 2040. |  <ul style="list-style-type: none"> Provide 2,000 people with training for the low carbon and renewable energy sector. |  <ul style="list-style-type: none"> Establish 5 low carbon clusters in South Yorkshire by 2040. |
| <p>GOAL 2 – Infrastructure</p> |  <ul style="list-style-type: none"> At least 5 minewater energy schemes operational by 2040. |  <ul style="list-style-type: none"> Increase solar PV capacity to 1.3GW by 2040. Increase onshore wind capacity to 0.9GW by 2040. |  <ul style="list-style-type: none"> 90% low carbon heating penetration (or hydrogen-ready) by 2040. |
| <p>GOAL 3 – Built Environment</p> |  <ul style="list-style-type: none"> 100,000 cavity walls insulated by 2040. 125,000 solid walls insulated by 2040. |  <ul style="list-style-type: none"> No fossil fuel heating in new homes from 2025. All new homes to be built close to PassivHaus standard from 2030. |  <ul style="list-style-type: none"> Double the number of community energy organisations in South Yorkshire by 2040. 100kW per year of community energy by 2030. |
| <p>GOAL 4 – Transport</p> |  <ul style="list-style-type: none"> 10% reduction in car miles by 2030, rising to a 25% reduction in 2040. |  <ul style="list-style-type: none"> Fully zero-emission public transport network by 2035. |  <ul style="list-style-type: none"> Fully zero-emission private hire fleet by 2035. |

INTRODUCTION

International Context

In 2013, the concentration of CO₂ in the global atmosphere breached the 400 parts per million (ppm) barrier for the first time in human history⁷. In response to this, the international community have signed several treaties aiming to limit the emission of greenhouse gases. The most notable of which being the Kyoto Protocol and the Paris Agreement/accord. The Paris Agreement came into force in November 2016 and pledged to act to limit the average global temperature rise to 2°C with an aim to remain below 1.5°C warming. The Intergovernmental Panel on Climate Change (IPCC) published a Special Report on Global Warming in October 2018, which reported that *‘Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate’*. (REF) Some of the impacts of this temperature increase will be long-lasting or irreversible, such as the loss of some ecosystems.

In November 2019, the European Parliament declared a ‘Climate and Environmental Emergency’ and urged all EU countries to commit to net-zero greenhouse gas emissions by 2050 (REF). Many developed and developing countries are committed to moving towards a cleaner energy future, although there is a significant proportion that are still to commit to wholesale changes.

National Context

The UK’s Industrial Strategy was published in 2018 (REF) and sets out the Government’s plan to create an economy that boosts productivity and earning power throughout the UK. It sets Four Grand Challenges where the UK can lead the global technological revolution:

- **Clean Growth:** maximising advantages for UK industry from the global shift to clean growth.
- **Artificial Intelligence (AI) and Data Economy:** putting the UK at the forefront of AI and data revolution.
- **Future of Mobility:** being a world lead in shaping the future of mobility.
- **Ageing Society:** harnessing the power of innovation to help meet needs of an ageing society.

These challenges each have strong links with the energy and low carbon sectors and with economic growth. The UK Industrial Strategy highlights several ways in which we will need to consider low carbon energy and energy efficiency to build an economy that works for everyone. These include:

- Upgrading energy infrastructure to enable growth and support new technologies;
- Delivering affordable energy and keeping energy costs down for businesses;
- Delivering clean growth and securing the economic benefits of the transition to a low carbon economy;
- Investing in science, research and innovation, including energy storage and grid technologies; and
- Supporting businesses to start and grow.

The Industrial Strategy recognises that LEPs will play an important part in supporting local growth, and emphasises the importance of collaboration between LEPs, alongside the need for policy flexibility at the regional level. In terms of funding, Government recognises that LEPs require financial support to be effective. Additional financial resources will be made available to LEPs that demonstrate ambitious levels of reform.

The Clean Growth Strategy (CGS), published in 2017 (REF), provides an ambitious blueprint for Britain’s low carbon future, outlining how investment in green energy goes together with economic growth and placing clean growth at the centre of the Industrial Strategy. Core to the CGS are:

- **Accelerating Clean Growth:** developing world leading ‘Green Finance’ capabilities.

⁷ NASA Climate Change (https://climate.nasa.gov/climate_resources/7/graphic-carbon-dioxide-hits-new-high/; Accessed: 20/07/2018)

- **Improving our Homes;** upgrading energy efficiency; strengthening building standards; rolling out heat networks; phasing out of high carbon heating.
- **Accelerating the Shift to Low Carbon Transport:** supporting the uptake of ULEVs; developing an EV charging network; shifting freight from road to rail; and battery technology.
- **Delivering Clean, Smart, Flexible Power:** phasing-out of coal, developing new ways of grid balancing through storage and demand response.
- **Improving Business and Industry Efficiency:** improving energy productivity and commercial building standards; delivering industrial energy efficiency; investing in industrial innovation.
- **Enhancing the Benefits and Value of Our Natural Resources:** a new network of forests; zero avoidable waste by 2050.
- **Leading in the Public Sector:** setting a voluntary public sector carbon reduction target; funding energy efficiency improvements in England.

What is Net-Zero?

“‘Net-zero’ emissions means that the total of active removals from the atmosphere offsets any remaining emissions from the rest of the economy.”

i.e. all efforts are made to reduce emissions to zero but all residual emissions are offset by removing emissions from the atmosphere.

In May 2019, the Committee on Climate Change recommended that the “The UK should legislate as soon as possible to reach net-zero greenhouse gas emissions by 2050. The target can be legislated as a 100% reduction in greenhouse gases (GHGs) from 1990 and should cover all sectors of the economy, including international aviation and shipping.”⁸. This recommendation was accepted by the UK Government and in June 2019, the UK became the first major economy to legislate for net-zero⁹.

In November 2020, the UK will host COP26¹⁰ – the United Nations Framework Convention on Climate Change meeting of governments which will be working to develop the international response to the climate emergency.

Local Context

In November 2019, the Mayoral Combined Authority of Sheffield City Region declared that we were in a ‘Climate and Environmental Emergency’¹¹. This followed declarations by Barnsley Metropolitan Borough Council, Doncaster Metropolitan Borough Council and Sheffield City Council earlier in 2019. Rotherham Metropolitan Borough Council is currently considering a similar position.

Purpose and Scope of the SCR Energy Strategy

The Department for Business, Energy, and Industrial Strategy (BEIS) are delivering a Local Energy Programme, which intends to enhance the levels of support that LEPs will receive when delivering low carbon projects. The first phase of this programme provided funding to all LEPs in England to support them in developing a bold, coherent and well-evidenced Energy Strategy, with an emphasis on identifying investable projects which enhance decarbonisation opportunities across their regions.

⁸ CCC – Net-Zero: The UK’s Contribution to Stopping Global Warming (<https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf>), May 2019

⁹ House of Commons Library – The Climate Change Act 2008 (2050 Target Amendment) Order 2019 (2019) (https://www.legislation.gov.uk/ukdsi/2019/9780111187654/pdfs/ukdsi_9780111187654_en.pdf; Accessed: 18/12/2019)

¹⁰ UNFCCC – UK to host COP26 (25 Sep 2019) (<https://unfccc.int/news/united-kingdom-in-partnership-with-italy-to-host-cop-26/cmp-16/cma-3>; Accessed: 18/12/2017)

¹¹ SCR – Minutes of Mayoral Combined Authority Meeting (09 Nov 2019) (<https://moderngov.sheffieldcityregion.org.uk/documents/g173/Printed%20minutes%2018th-Nov-2019%2014.00%20SCR%20-%20Mayoral%20Combined%20Authority%20Board.pdf?T=1>; Accessed: 20/12/2019)

This SCR Energy Strategy will set the framework for South Yorkshire’s transition to a ‘net-zero carbon’ economy whilst taking advantage of the significant economic opportunities that it will unlock. In order to maximise the local economic benefit associated with the transition, areas of competitive advantage have been identified that can be utilised, including those brought by existing businesses, educational institutions, communities, and existing infrastructure. SCR has a unique opportunity to stimulate innovative investment opportunities in the low carbon energy sector to develop and decarbonise the South Yorkshire economy.

The SCR Independent Economic Review in 2013 (REF) noted that South Yorkshire’s “technology, manufacturing and engineering offer is as good as anywhere in Western Europe with a world-leading cluster of research institutes and innovative businesses centred around the Advanced Manufacturing Park”. While the Science and Innovation Audit carried out by BEIS in 2016 (REF) identified energy as a key sector that provides the potential for economic growth based on its science base.

This SCR Energy Strategy therefore highlights the areas where the SCR can have the greatest impact in terms of leading the rapid decarbonisation required in South Yorkshire, and those areas where partners will be required to take the lead with SCR’s support. It is important that this SCR Energy Strategy is not seen as an end-point – it is much more a starting-point to meet the decarbonisation and economic aspirations of South Yorkshire, whilst maintaining energy resilience and not unduly impacting on the competitiveness of local businesses.

This will require close collaboration with our local, regional and national partners in a co-ordinated way to seek opportunities and to jointly invest in our low carbon future.

VISION AND GOALS

Vision

*For South Yorkshire to be recognised as the
'The Green Heart of Great Britain' with:*

A clean, efficient and resilient energy system, which supports a healthier environment for people to live, work and visit, and which drives our transition to a low carbon economy.

Goals

Four high-level Goals have been established to support the Vision. Within each of these Goals, three Policies have been developed (**Section X**) to highlight specific areas of action.

1

Drive clean growth and decarbonisation in our local businesses and industry whilst maintaining their competitiveness.

2

Promote investment and innovation in low carbon energy generation, distribution and storage.

3

Improve the energy efficiency and sustainability of our built environment, and encourage communities to be part of the transition.

4

Accelerate the transition to ultra-low emission vehicles (ULEVs) and transport systems through modal shift and supporting infrastructure.

The evidence supporting the Vision and these Goals is given in the following Sections.

ENERGY

Energy Consumption

In 2017, South Yorkshire consumed a total of 28.7 TWh of energy. This represents a 23.4% decrease on 2005 levels (FIGURE X)¹². The reduction in energy use has been seen across transport, domestic, and industry and commercial; but the reduction has not been evenly distributed across the economy with industry reducing its consumption by over one-third¹³ and transport reducing its consumption by only 5% owing mainly to increasing passenger-km travelled (REF).

Much like the rest of England, South Yorkshire's energy use is fairly evenly split between transport (32%), domestic (34%), and industry and commercial (34%)¹⁴. However, there is a fairly large difference between the four Local Authority areas with the energy use in transport varying between 23% and 42% depending on the LA (FIGURE X).

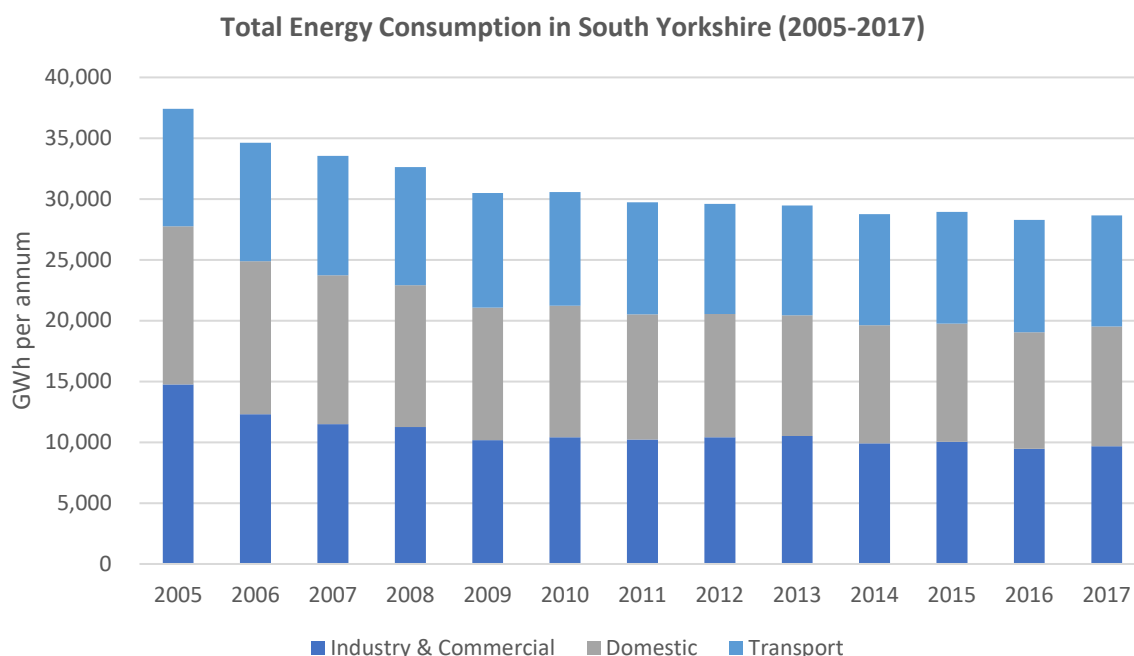


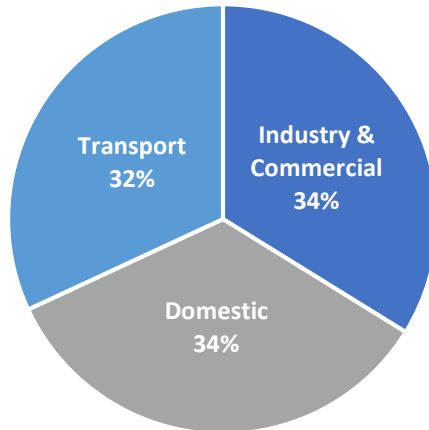
Figure X – Total Energy Consumption for South Yorkshire between 2005 and 2017

¹² BEIS – Sub-national total final energy consumption statistics (2019): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833987/Sub-national-total-final-energy-consumption-statistics_2005-2017.xlsx [Accessed: 30/10/2019].

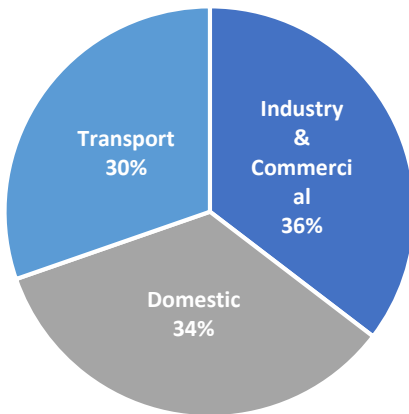
¹³ Although a proportion of this reduction is due to the closure of some energy intensive industry within South Yorkshire rather than efficiency gains.

¹⁴ BEIS – Sub-national total final energy consumption statistics (2019): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833987/Sub-national-total-final-energy-consumption-statistics_2005-2017.xlsx [Accessed: 30/10/2019].

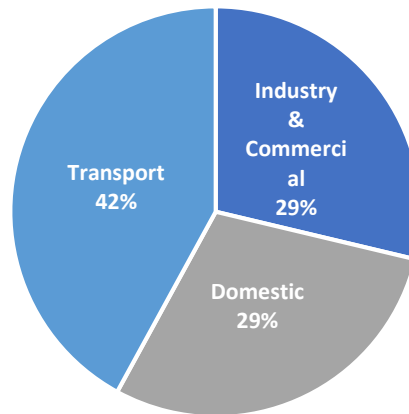
Total Energy Consumption in South Yorkshire (2017)



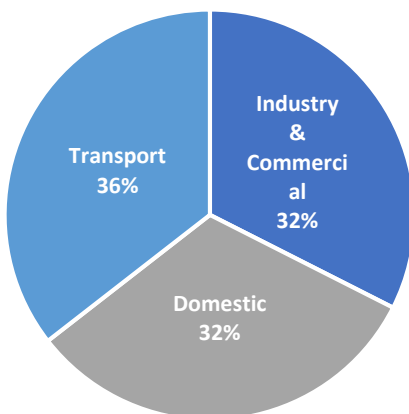
Barnsley



Doncaster



Rotherham



Sheffield

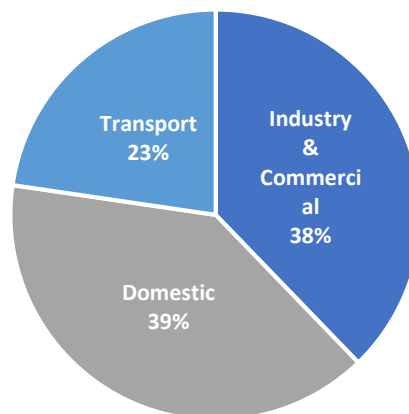


Figure X – Total Energy Consumption for each Local Authority in South Yorkshire in 2017¹⁵

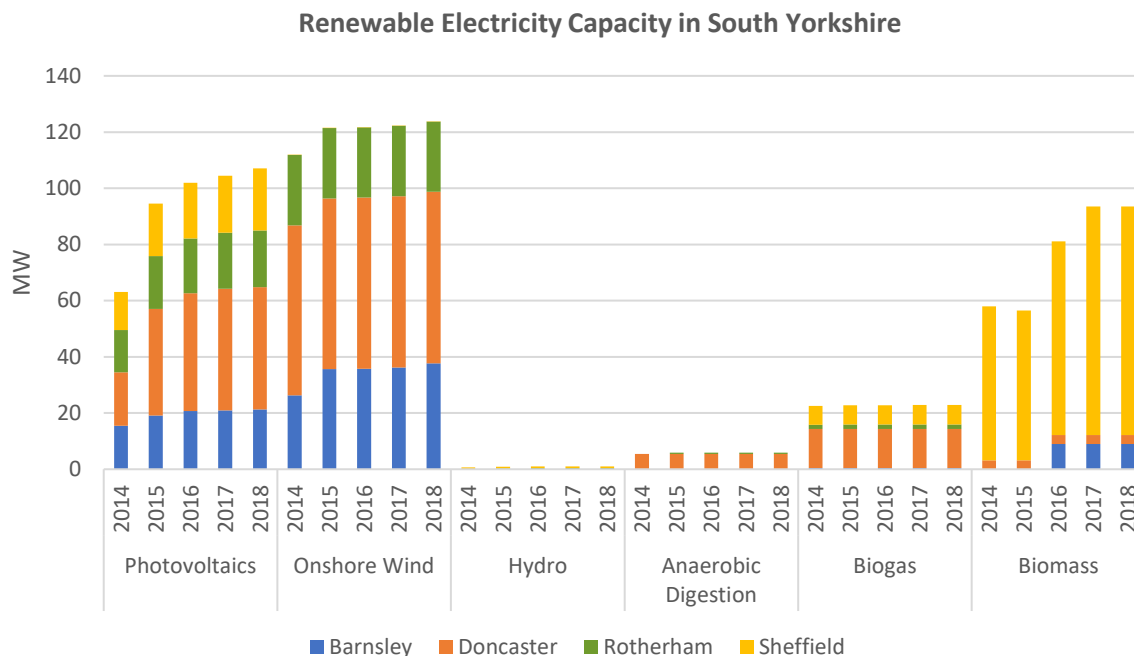
¹⁵ BEIS – Sub-national Total Final Energy Consumption Statistics (2019) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833987/Sub-national-total-final-energy-consumption-statistics_2005-2017.xlsx; Accessed 31/10/2019)

Most of the energy that is consumed in South Yorkshire is produced from fossil fuels. Petrol and diesel still dominate in the transport sector, with natural gas dominating in the domestic and industry and commercial sectors. Overall, fossil fuels still account for 89% of South Yorkshire’s energy supply with renewables, bioenergy and waste accounting for a small but growing proportion (11%). Fossil fuels therefore will be a required – but reducing – part of the energy landscape in the short-to-medium term.

Smart technologies are increasingly important in alleviating strain on the electricity network and meeting the demands of new patterns and types of energy consumption. They do this through increasing flexibility by shifting some of the demand to off-peak times, matching demand with generation, and digitising energy. This will reduce the extent to which large scale replacement and upgrading works will need to be carried out on the electricity network thus keeping costs down for consumers. Demand-side response (DSR) is a proven way in which to reduce the effect of electricity consumption on the network by shifting usage from periods of high consumption (peaks) to periods of low consumption (troughs). Typically, the consumer receives a financial incentive to reduce usage on non-essential items when there is high demand or reduced supply, or a financial incentive can even be given to use power when there is an excess of supply e.g. a windy day. This provides the suppliers with a more stable load, and consumers with the opportunity to reduce their bills. Currently, DSR is underutilised within South Yorkshire but is becoming increasingly more accessible.

Electricity Generation

South Yorkshire’s electricity generation is very low owing to having limited generation capacity (Figure X). In 2017, South Yorkshire consumed 5,399 GWh¹⁶ of electricity but only generated 16.5% (892 GWh¹⁷) through renewable generation (Figure X). This shows that we will likely rely on power from outside of South Yorkshire for the foreseeable future due to the increased consumption associated with the move towards electric vehicles and electrification of heat.



¹⁶ BEIS – Sub-national total final energy consumption statistics (2019) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833987/Sub-national-total-final-energy-consumption-statistics_2005-2017.xlsx; Accessed: 30/10/2019)

¹⁷ BEIS – Renewable Electricity by Local Authority (2019) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834142/Renewable_electricity_by_local_authority_2014_to_2018.xlsx; Accessed: 13/11/2019)

Figure X – Renewable electricity capacity in South Yorkshire [MW]¹⁸

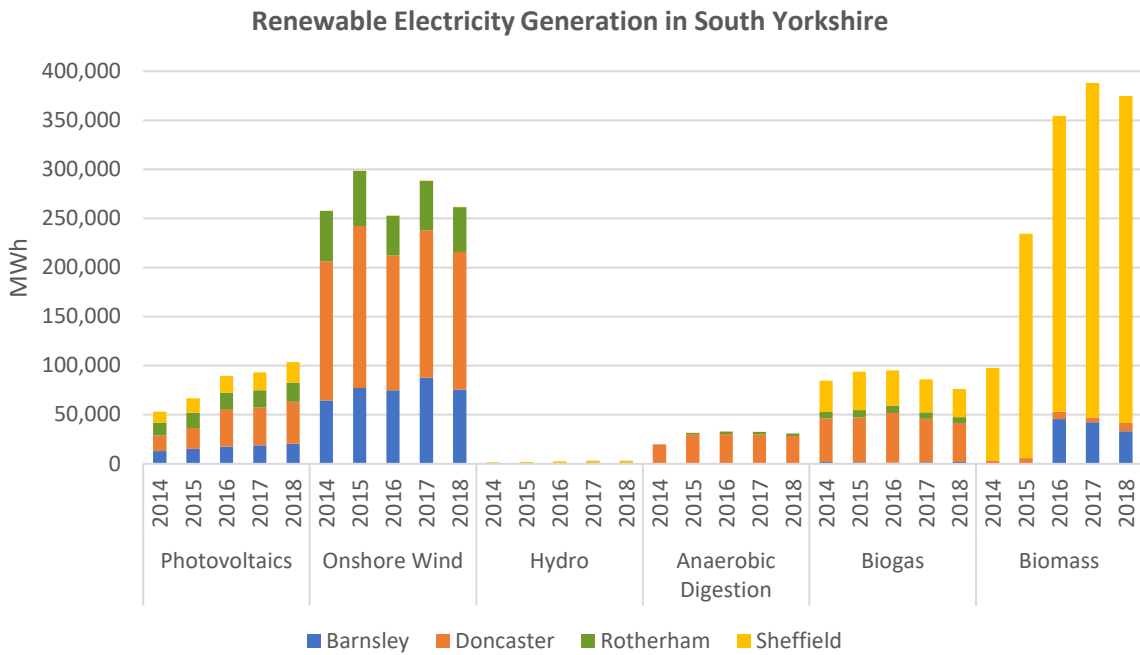


Figure X – Renewable electricity generation in South Yorkshire [MWh]¹⁹

Much of the renewable generation in South Yorkshire comes from the Blackburn Meadows Power Station²⁰: a 29MW_e and 25MW_{th} capacity biomass-CHP power station operated by E.On whose district heat network supplied Sheffield Arena, Sheffield Forgemasters, and IKEA. The opening of Templeborough Biomass Power Plant in 2019 which has a capacity of 41MW_e (enough to supply electricity to over 78,000 dwellings²¹) further increases South Yorkshire’s biomass generation.

Onshore wind contributes over 250 GWh of electricity to South Yorkshire; the largest proportion of which comes from Doncaster which has seven onshore windfarms including: an 8.2MW farm at Marr, an 8.2MW farm at Hampole, and a 44MW farm at Tween Bridge Moor – the largest in South Yorkshire (Figure X). Rotherham has a 20.4MW onshore wind farm at Penny Hill²².

¹⁸ BEIS – Renewable Electricity by Local Authority (2019)

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834142/Renewable_electricity_by_local_authority_2014_to_2018.xlsx; Accessed: 13/11/2019)

¹⁹ BEIS – Renewable Electricity by Local Authority (2019)

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834142/Renewable_electricity_by_local_authority_2014_to_2018.xlsx; Accessed: 13/11/2019)

²⁰ Blackburn Meadows Biomass Power Plant (<https://www.eonenergy.com/business/why-eon/case-studies/blackburn-meadows.html>); Accessed: 04/12/2019)

²¹ Templeborough Biomass Power Plant (<https://www.templeboroughbiomass.com/templeborough-biomass-power-plant/>); Accessed: 04/12/2019)

²² Penny Hill Wind Farm (<https://www.banksgroup.co.uk/projects/renewables/penny-hill/>); Accessed: 04/12/2019)

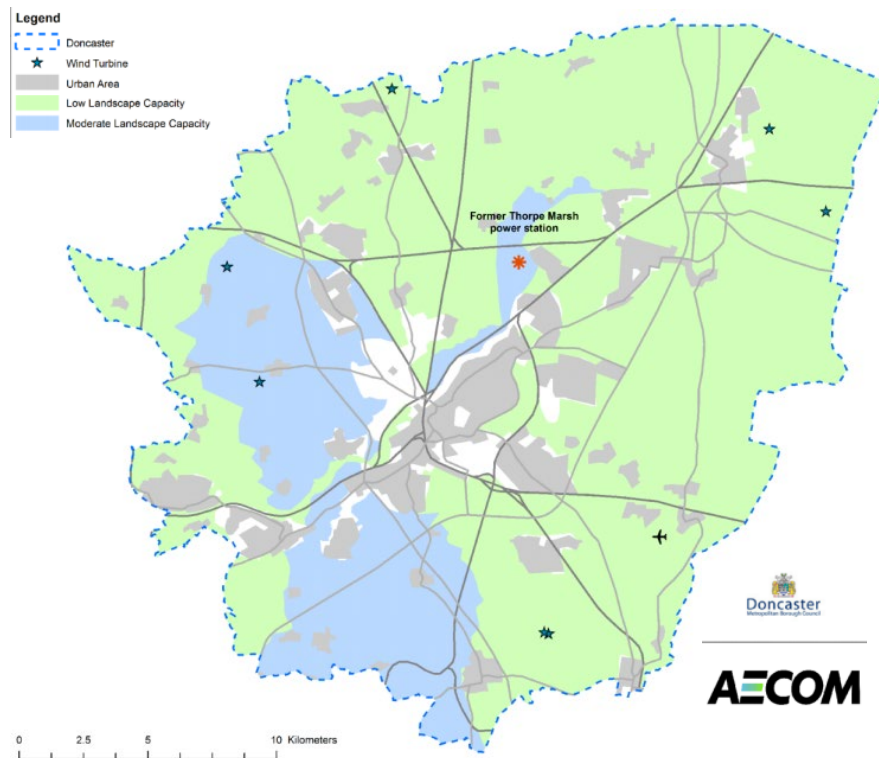


Figure X – Location of wind farms in Doncaster Borough (adapted from the Doncaster Local Plan (REF))

Whilst solar PV has a lot of capacity within South Yorkshire, its capacity factor is low meaning that the amount generated is relatively low. Yet, one of the region’s solar PV successes is Energise Barnsley which was set up to deliver community-owned renewable energy, energy efficiency and energy supply projects. As of October 2019, Energise Barnsley had 321 domestic installations of solar PV (alongside energy efficiency and battery storage) saving residents an estimated £150,000²³. Residents of Barnsley were able to invest from £100 with an expected rate of return of 5%.

One source of low carbon electricity not captured in **Figure X** is the contribution of EfW (energy from waste). In Sheffield, the Veolia EfW plant has an electrical generation capacity of 21MW_e which feeds into the national distribution network and, via private wire, recharges the batteries on their two electric refuse collection vehicles (REF). In addition to this, there is a 3MW_e EfW plant in Doncaster, and a planned 20MW_e EfW site at Haughton Main in Barnsley.

Electricity Storage

There is not a significant amount of existing electrical storage capacity in South Yorkshire at the moment, however this is seen as a growth area for the region. Currently, there is over 90MW of electrical battery capacity with planning permission granted in South Yorkshire for an additional 60MW already operational (**Table X**).

Table X – Location and capacity of electricity storage systems in South Yorkshire²⁴

| Location | Battery Capacity | Development Status |
|-------------------|------------------|-----------------------|
| Nether Moor Field | 49.9 MW | Awaiting Construction |
| Tofts Lane | 40.0 MW | Operational |

²³ CRESR – Catalysing People-Powered Energy in Yorkshire and the Humber (<https://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/catalysing-people-powered-energy-y&h.pdf>; Accessed: 19/12/2019)

²⁴ Renewable Energy Planning Database (REPD) – September 2019 (2019) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839368/Public-Database-September-2019.xlsx; Accessed: 13/12/2019)

| | | |
|------------------------|---------|-----------------------|
| Aven Industrial Estate | 20.0 MW | Awaiting Construction |
| Petre Street | 20.0 MW | Operational |
| Long Lands Lane | 12.0 MW | Awaiting Construction |
| Blackburn Meadows | 10.0 MW | Awaiting Construction |
| Thrybergh Hydro Scheme | 300 kW | Awaiting Construction |

Although electrical storage deployment has been slow in South Yorkshire, all of the elements required for sector growth are in place. CREESA (see Section X) – part of the University of Sheffield’s Energy Institute – are leaders in research and development of electrical storage systems. South Yorkshire is also the location of a number of battery technology companies and in July 2019, SCR provided a Business Investment Fund grant to Ricardo to set up a battery manufacturing and assembly plant in Rotherham for McLaren²⁵. Battery re-use and recycling has become increasingly important due to the increased use of the technology in smart phones, EVs, and large-scale electrical storage. CREESA have demonstrated the potential of EV battery ‘second life’ as support to the electrical distribution network²⁶. On a commercial level, RS Bruce in Rotherham are aiming to establish the UK’s first lithium battery recycling centre in 2020²⁷.

Heat Generation

Heat is generated for a variety of reasons and across different sectors. Within the domestic sector, heat energy is used for hot water supply and space heating, and within industry and commerce for process heating and drying processes, amongst many other applications. Heat is also a common waste product across many industries. The easiest and thus most common way to produce heat is through burning combustible matter, typically fossil fuels, which is highly carbon intensive. Technologies have been developed to decarbonise heating, although these are often not as well known or understood by the public or businesses meaning the uptake of technologies such as heat pumps has been low.

The Renewable Heat Incentive (RHI) is a scheme that has been developed to encourage domestic and commercial users to generate heat from renewable sources, these may include: solar thermal systems, heat pumps (air source, ground source or water source), and biomass/biogas boilers. Users of the scheme benefit from payments for every unit of heat energy they generate and use themselves.

Using data²⁸ from the RHI, it can be seen that domestic and non-domestic sectors across the UK had installed 24MW and 99MW of renewable heating capacity respectively by 2017. Combined, this new capacity accounts for only 3% of the total capacity of installed measures taking advantage of the RHI scheme. Typically, biomass systems are preferred by non-domestic users, covering 97% of all non-domestic capacity. For domestic users, the capacity spread for each technology is more balanced, biomass is still the most preferred (43%), but heat pumps (specifically air source, 39%) also provide a substantial share of capacity (REF).

The Veolia managed Sheffield District Energy Network is the most successful District Heat Network in the UK since its opening in 1988. The District Energy Network now provides over 140 buildings with low carbon energy from un-recyclable waste that would otherwise be sent to landfill. Pipework currently extends 45km under Sheffield saving over 20,000 tonnes of carbon emissions and providing heat to Universities, hospitals, public and private businesses, and dwellings (REF).

²⁵ Machinery Market – ‘Ricardo plans battery plant for Rotherham’ (06 Jul 2019) (<https://www.machinery-market.co.uk/news/24247/Ricardo-plans-battery-plant-for-Rotherham>; Accessed: 13/12/2019)

²⁶ University of Sheffield (CREESA) – Willenhall Project Facts (<https://www.sheffield.ac.uk/creesa/willenhall/facts>; Accessed: 18/12/2019)

²⁷ RS Bruce – R S Bruce ‘supercharges’ its battery recycling ambitions (<https://rsbruce.com/lithium-ion-battery-recycling/>; Accessed: 17/12/2019)

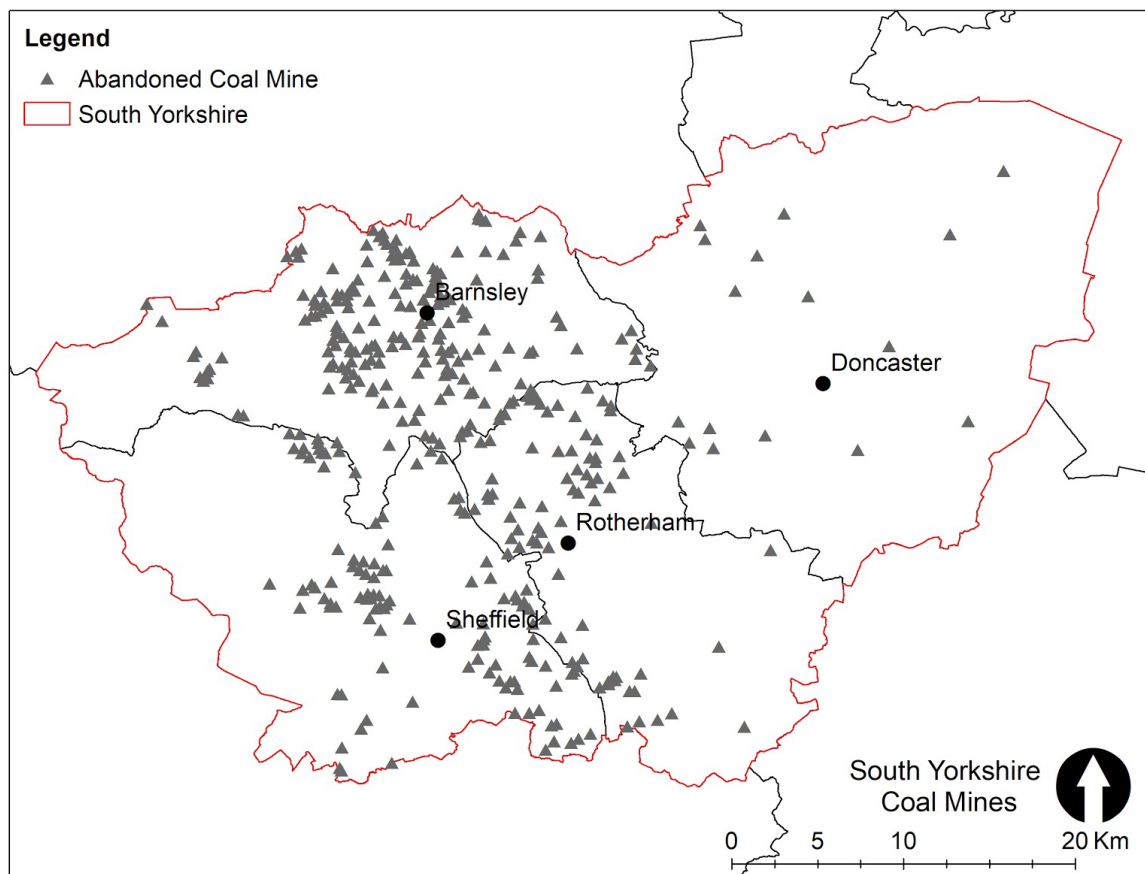
²⁸ BEIS – Renewable Heat Incentive Statistics (<https://www.gov.uk/government/collections/renewable-heat-incentive-statistics>; Accessed: 21/11/2019)

The idea of using hydrogen gas to replace natural gas for domestic heating has gained traction in recent years. The UK government and the wider industry have several large-scale innovation projects investigating the potential including H21²⁹, and Hy4Heat³⁰. Hydrogen used to make up 50-60% of the UK's 'town' gas supply in the mid-20th century, but now only 0.1% of hydrogen is allowed within the gas network³¹. Research³² is currently ongoing at Keele University to understand the impact of increasing the percentage of hydrogen in the gas network to 20%.

Heat Storage

There is little or no heat storage currently within South Yorkshire, but new opportunities exist, but will require demonstration projects to prove technical and commercial viability for 'scaling up' schemes, if they are to play a significant role in the future energy mix.

One such opportunity is to build on South Yorkshire's mining heritage, and explore the use of geothermal energy from abandoned mines could be a key form of low carbon energy production in the future – particularly in areas where a decarbonised 'gas' network is not present. These legacy subterranean structures can also be used to store thermal energy (from waste heat or purposefully generated solar heat) generated during summer months for use during the winter – 'inter-seasonal storage' (Figure X). It is essential that these assets are exploited if commercially viable opportunities can be demonstrated, such that South Yorkshire becomes a front runner in developing former coalmines for use in energy schemes and thereafter benefitting from a variety of first-mover advantages in the market.



²⁹ Northern Gas Networks – H21 (2017) (<https://www.northerngasnetworks.co.uk/wp-content/uploads/2017/04/H21-Report-Interactive-PDF-July-2016.compressed.pdf>; Accessed: 21/11/2019)

³⁰ Hy4Heat (<https://www.hy4heat.info/>; Accessed: 21/11/2019)

³¹ Gas Safety (Management) Regulation 1996 – Schedule 3 (Content and other characteristics of gas) (<http://www.legislation.gov.uk/uksi/1996/551/schedule/3/made>; Accessed: 22/11/2019)

³² HyDeploy (<https://hydeploy.co.uk/>; Accessed: 21/11/2019)

Figure X – The distribution of the 400+ mines throughout South Yorkshire³³

Community Energy

Community energy projects are a perfect way to accelerate the deployment of distributed energy, putting individuals at the heart of energy systems. These schemes can deliver an array of benefits resulting in improved resilience, education, and empowerment for local communities; a great example of this in action is Energise Barnsley, the largest local authority and community energy solar PV and battery storage project in the UK. But overall, South Yorkshire has a relatively low number of community energy projects per resident compared to the South West or London (Figure X). Barriers to deployment include: changes in national policy e.g. feed in tariffs, capacity of volunteers and staff, economies of scale, connections to investors, access to sites, high risk-aversion, and costs associated with connecting to the electricity distribution network³⁴.

By working with local authorities, the wider public and the voluntary sector, the development of more community energy schemes will be encouraged. Community Energy England – whose headquarters are in Sheffield – will be a key partner in this area and helping to achieve some of the recommendations in the ‘Catalysing People-Powered Energy in Yorkshire and the Humber’ report by the Centre for Regional Economic and Social Research at Sheffield Hallam University. It is also important that local communities can invest in the energy infrastructure of South Yorkshire.

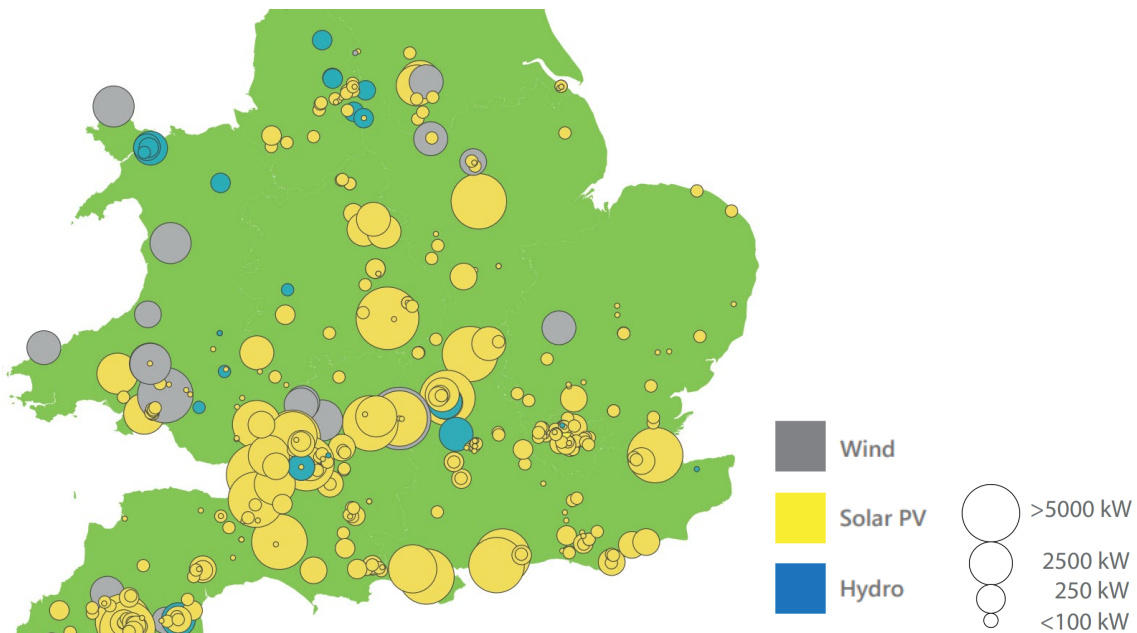


Figure X – Total electricity generation capacity from community energy schemes³⁵

³³ University of Sheffield – Energy Strategy Provocation (2019) (<https://moderngov.sheffieldcityregion.org.uk/documents/s1865/Appendix%201%20University%20of%20Sheffield%20Provocation%20Draft%20Final%20Report.pdf>; Accessed: 11/11/2019)

³⁴ CRESR – Catalysing People-Powered Energy in Yorkshire and the Humber (<https://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/catalysing-people-powered-energy-y&h.pdf>; Accessed: 19/12/2019)

³⁵ Adapted from: Community Energy England – State of Sector 2019 (2019) (https://communityenergyengland.org/files/document/327/1564062173_SOTS19_Infographicsv.1.3StandardQuality.pdf; Accessed: 04/12/2019)

BUILT ENVIRONMENT

Existing Housing Stock

Our population is forecast to grow by 9.3% between 2016 and 2041³⁶. At the same time, predicted trends suggest that the average household size will reduce because of the increase in single person households (REF). These trends put more pressure on our existing housing stock, and we need more new houses to support economic and population growth as well as to meet the demands of an ageing population.

Overall, South Yorkshire includes a significant proportion of older homes which are difficult to heat, and some, particularly in the private rented sector, are poorly maintained. In contrast, the majority of social housing and housing association stock is largely in a good condition due to significant public investment. However, these need ongoing maintenance and further investment can help to reduce the costs of heating for residents meaning they have more disposable income.

An Energy Performance Certificate (EPC) is an indicator of the energy efficiency of a dwelling³⁷. Across England in 2017, the average EPC rating was a 'D' with a score of 62 points³⁸ (Figure X). The typical energy bill of a dwelling with a 'C' rating is around £270 lower than a 'D' rated dwelling, and £650 lower than an 'E' rated dwelling³⁹. Using these figures, if all dwellings in South Yorkshire were brought up to a C rating, this would save residents over £250m per year⁴⁰.

Distribution of EPCs in South Yorkshire

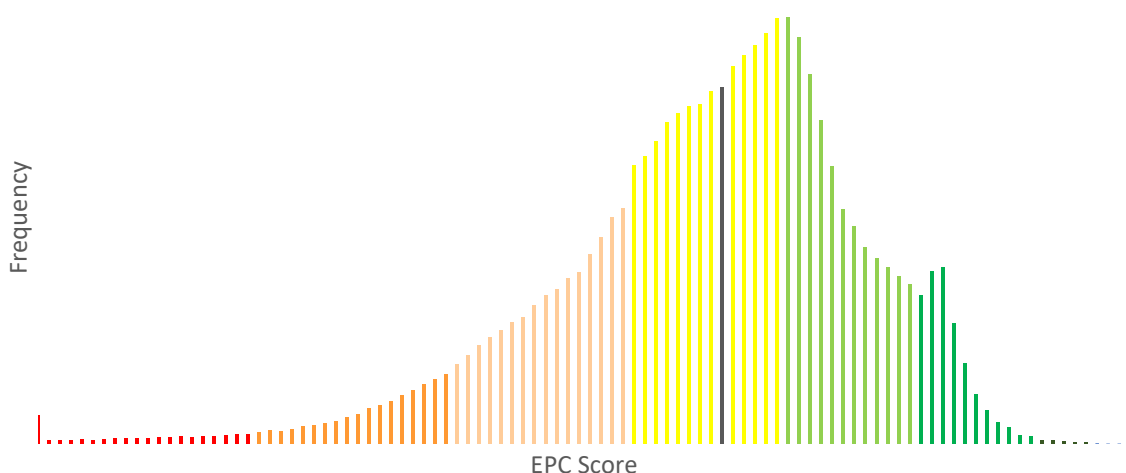


Figure X – Frequency of EPC score in South Yorkshire (2005-2016)⁴¹ with 1 on the left to 100 on the right (average rating in England shown in grey).

³⁶ ONS - Population projections for local authorities (<https://www.ons.gov.uk/file?uri=%2fpeoplepopulationandcommunity%2fpopulationandmigration%2fpopulationprojections%2fdatasets%2flocalauthoritiesinenglandtable2%2f2016based/table2.xls>; Accessed 02/12/2019)

³⁷ Note: An EPC is only required on the transfer (sale/rent) of a dwelling and therefore the EPC database does not include each dwelling in South Yorkshire but is likely to be representative.

³⁸ MHCLG – English Housing Survey Headline Report (2017-18) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834603/2017-18_EHS_Headline_Report.pdf; Accessed 04/12/2019)

³⁹ BEIS – Call for Evidence: Building a Market for Energy Efficiency (2017) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/653731/Call_for_Evidence_-_Building_a_Market_for_Energy_Efficiency_Final.pdf; Accessed 04/12/2019)

⁴⁰ Number of dwellings in South Yorkshire = approx.. 586,000. 586

⁴¹ MHCLG – Energy Performance of Buildings data: England and Wales (<https://epc.opendatacommunities.org/>; Accessed: 16/08/2019)

Figure X shows that South Yorkshire has a typical energy consumption trend, mirroring the trend for Great Britain as a whole, but more will need to be done to reduce the amount that residents are spending on their energy bills. Figure X shows that South Yorkshire as a whole has a far lower median electricity consumption compared to England as a whole. This could be the result of better behaviours such as not leaving electrical equipment on when not in use, or technological improvements such as LED lighting. Nevertheless, this still results in an electricity bill of over £450 per year⁴² per household (a total of £267m across South Yorkshire) compared to the national average of £495 per year.

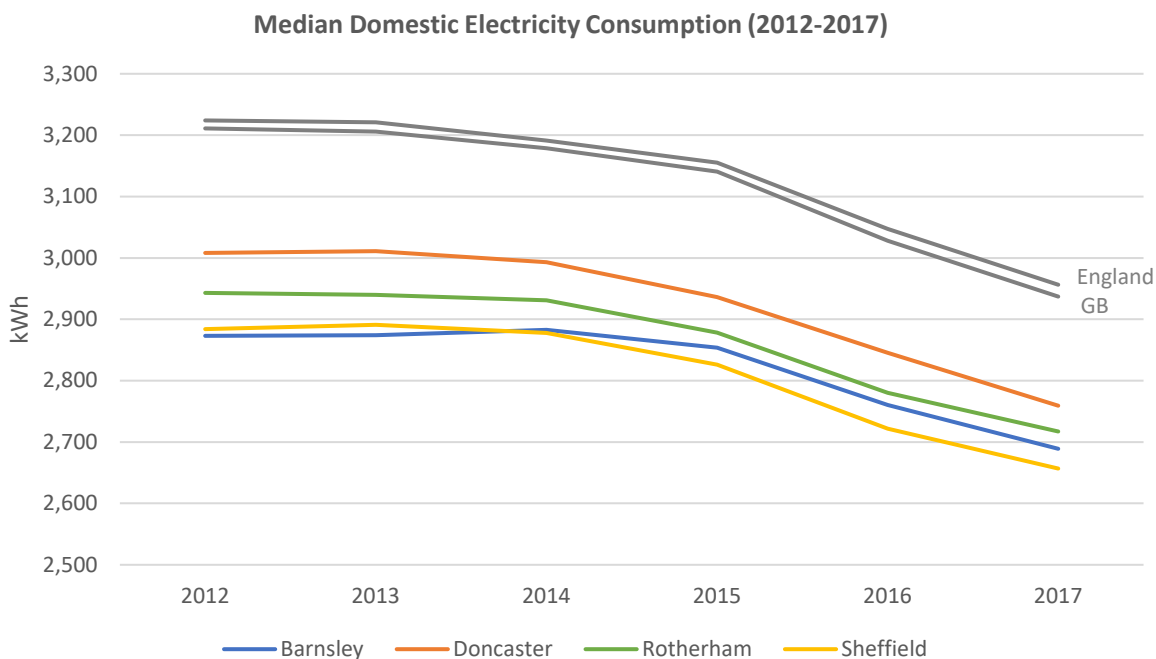


Figure X – Median domestic electricity consumption in South Yorkshire compared to England and GB⁴³

The median domestic gas consumption in England is 12,300 kWh per year⁴⁴ equating to around £515⁴⁵. Some LSOAs (lower super output areas) in South Yorkshire are using far beyond this (Figure X) but the reasons are not fully known – it could be that homes are poorly insulated; homes are much larger than average; there is an above average occupancy rate leading to higher cooking and hot water requirements; or a combination of these.

⁴² Electricity: 2,700kWh x £0.1500 per kWh = £405 per year. Standing charge: £0.15 per day x 365 days = £54.75 per year. Total = £454.75 per year.

⁴³ BEIS – Sub-national electricity consumption statistics (2005-2017) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834196/Sub-national_electricity_consumption_statistics_2005-2017.xlsx; Accessed 30/10/2019). Note: Only 2012-2017 data used due to change in methodology.

⁴⁴ BEIS – National Energy Efficiency Data-framework (NEED): Summary of Analysis, Great Britain 2019 (2019) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/812561/National_Energy_Efficiency_Data_Framework_NEED_report_summary_of_analysis_2019.pdf; Accessed 04/12/2019)

⁴⁵ Gas: 12,300kWh x £0.0375 per kWh = £461.25 per year. Standing charge: £0.15 per day x 365 days = £54.75 per year. Total = £516.00 per year.

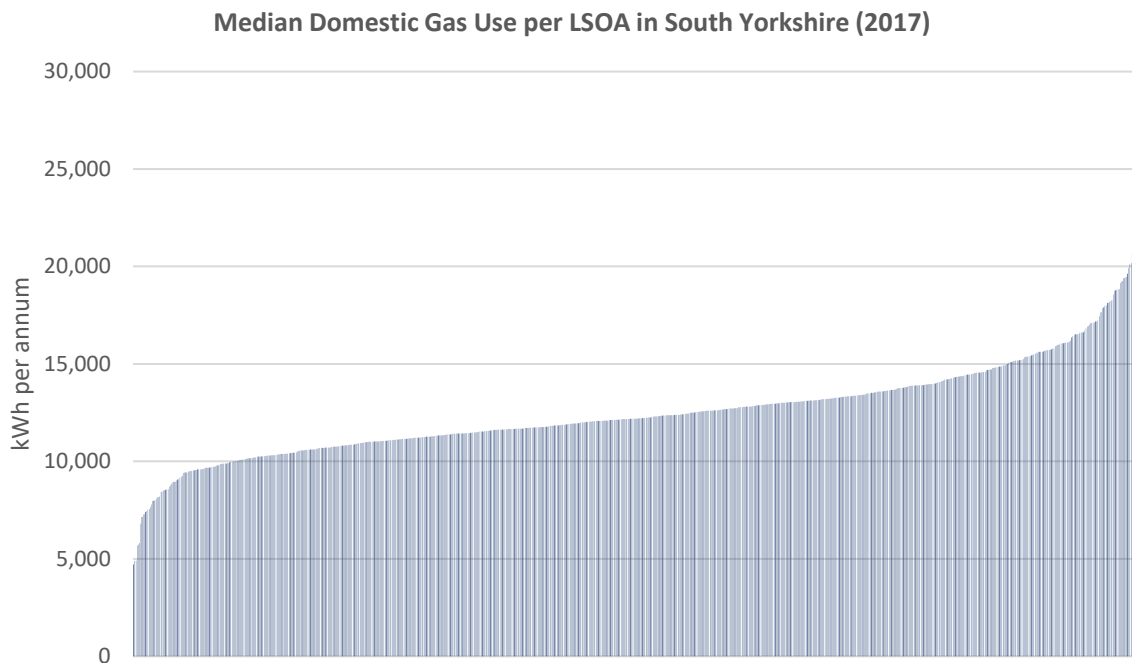


Figure X – Ranked median domestic gas use in each LSOA in South Yorkshire (2017)⁴⁶

Installation of insulation or a new boiler is proven to reduce the gas bills of a dwelling (**Table X**), in addition to increasing the perceived comfort level. These measures do typically come with a significant price tag which often puts them out of reach for those on the lowest incomes.

Table X – Median gas savings in 2017 for measures installed the previous year and the range of installation costs

| Energy Efficiency Measure | Median Savings⁴⁷ | Installation Cost⁴⁸ |
|----------------------------------|------------------------------------|---------------------------------------|
| Condensing Boiler | 6% | £1,600 – £4,000 |
| Cavity Wall Insulation | 7% | £480 – £660 |
| Loft Insulation | 4% | £185 – £670 |
| Solid Wall Insulation | 13% | £6,800 – £15,000 |

⁴⁶ BEIS – Domestic Gas Consumption by LSOA 2017 (2019)

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766981/LSOA_domestic_gas_2017.csv.csv;
Accessed: 11/11/2019)

⁴⁷ BEIS – National Energy Efficiency Data-framework (NEED): Summary of Analysis, Great Britain 2019 (2019)

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/812561/National_Energy_Efficiency_Data_Framework_NEED_report_summary_of_analysis_2019.pdf; Accessed 04/12/2019)

⁴⁸ BEIS – What does it cost to retrofit homes? (2017)

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/656866/BEIS_Update_of_Domestic_Cost_Assumptions_031017.pdf; Accessed: 04/12/2019)

Whilst gas heating is still the most prominent within South Yorkshire, there are a proportion of dwellings who use alternate heating including: electricity, solid fuels, heating oil, and LPG. Approximately 1-in-40 dwellings is not connected to the gas network in South Yorkshire⁴⁹ which poses both challenges and opportunities. Assuming that any future hydrogen/bio- gas network will not expand significantly to accommodate these dwellings, this leaves the options of electrification of heat (e.g. air/ground source heat pumps) or mini heat networks connected to a local heat supply (e.g. minewater or waste heat).

Currently, the number of dwellings that have installed a low carbon heating system under the Government's Renewable Heat Incentive is low across South Yorkshire with under 1,400 applications between April 2014 and October 2019⁵⁰.

New Housing Stock

The ONS estimate that there will be 79,000 net additions to the housing stock in South Yorkshire between 2017 and 2041⁵¹. This is slightly lower than the combined 4,000-5,000 per year being planned in Local Plans for the four South Yorkshire Boroughs. It is important to build quality new homes which meet the expectations of reduced running costs of the occupants and take account of the movement away from fossil fuels for heating⁵².

Several new housing schemes are being piloted in South Yorkshire to test new housing product innovations such as Passivhaus, modular build, and other higher energy efficient building standards, that lower the energy use of new homes and ensure they are fit for the future. This includes the Citu development at Little Kelham⁵³ in Sheffield supported by the SCR Housing Fund. The challenge is to learn from these pilots to enable the roll-out of these innovations at greater scale, which would present additional opportunities for up-skilling, local job creation, and local supply chains. In a similar way, community heating networks can also be developed on new housing areas or introduced to existing residential neighbourhoods. For example, Sheffield City Council operates 135 community energy networks covering almost 6,000 council homes (REF). They can enable residents to manage their energy use and costs much more effectively with high tech controls and smart meters as well as low carbon heating systems. New homes in South Yorkshire are increasingly required to be more climate resilient to reduce the impact of climate intensified flooding which will require additional green infrastructure and sustainable urban drainage systems (SUDS) to be installed.

Fuel Poverty & Excess Winter Deaths

A household is considered to be in fuel poverty where⁵⁴:

- they have required fuel costs that are above average
- were they to spend that amount, they would be left with a residual income below the official poverty line

The three main contributors to a household being in fuel poverty are: household income; household energy requirements; and fuel prices.

In 2017, the percentage of households in fuel poverty in South Yorkshire was 10.6%⁵⁵. Indeed, all four of the South Yorkshire local authorities had fuel poverty levels slightly below the England average of 10.9% (Table X), however there is significant variation depending upon the IMD (index of multiple deprivation) decile (Figure X)

⁴⁹ BEIS – MSOA estimates of households not connected to the gas network (2018) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/767351/MSOA_estimates_of_households_not_connected_to_the_gas_network_2017.xlsx; Accessed: 17/12/2019)

⁵⁰ BEIS – RHI Deployment Data (2019) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/847371/RHI_monthly_official_stats_tables_Oct_19_final.xlsx; Accessed: 18/12/2019)

⁵¹ ONS – Household projections for England (2019) (<https://www.ons.gov.uk/file?uri=%2fpeoplepopulationandcommunity%2fpopulationandmigration%2fpopulationprojections%2fdatasets%2fhouseholdprojectionsforengland%2f2016based/maintablesupdatedniupdated.xlsx>; Accessed: 02/12/2019)

⁵² The UK Government have pledged to introduce a future homes standard, mandating the end of fossil-fuel heating systems in all new houses from 2025. (HC (13 March 2019) Vol 656, Col 351. Available at: <https://hansard.parliament.uk/commons/2019-03-13/debates/5B9C772E-1769-437A-A4F0-06DEAC55D676/SpringStatement> (Accessed: 02/06/2019))

⁵³ Citu – Little Kelham, Sheffield (<https://citu.co.uk/citu-places/little-kelham>; Accessed: 01/12/2019)

⁵⁴ Definition taken from: <https://www.gov.uk/government/collections/fuel-poverty-statistics> (Accessed: 02/12/2019).

⁵⁵ BEIS – Fuel Poverty Statistics (2019) (<https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2019>; Accessed: 02/12/2019)

Households in Fuel Poverty per IMD Decile

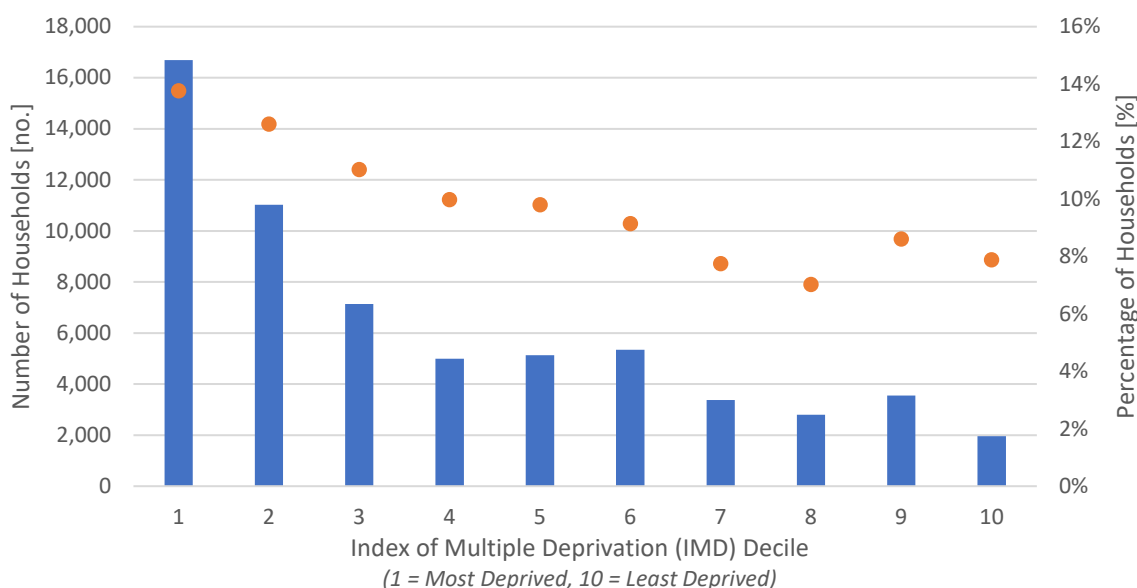


Figure X – Number (bars) & percentage (dots) of households in fuel poverty by IMD decile⁵⁶.

Table X – Comparison of fuel poverty rate and disposable income per head in each of South Yorkshire’s local authority areas

| Local Authority | Fuel Poverty ⁵⁷ | Average Gross Disposable Household Income (2016) ⁵⁸ |
|-----------------|----------------------------|--|
| Barnsley | 10.7% | £15,552 |
| Doncaster | 10.8% | £15,595 |
| Rotherham | 10.1% | £15,465 |
| Sheffield | 10.7% | £15,057 |

Fitting existing homes with energy efficiency measures is proven to be the most effective way to tackle fuel poverty and raise living standards, by reducing energy use and helping keep energy prices affordable, especially when combined with households transitioning to more affordable low carbon heating. Together these actions will help not only reduce the number of people living in fuel poverty, but they will improve health and well-being which ultimately will reduce the excess winter deaths.

A wide range of people are vulnerable to the cold, often due to a medical condition, a disability or other personal circumstances, such as a low income. In 2017/18 there were approximately 1,290 excess winter deaths in South Yorkshire – the highest figure for 20 years (**Figure X**).

⁵⁶ Analysis carried out by Sheffield City Region by matching the fuel poverty statistics to the IMD statistics at LSOA level.

⁵⁷ BEIS – Fuel Poverty Statistics (2019) (<https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2019>; Accessed: 02/12/2019)

⁵⁸ ONS – Regional gross disposable household income by local authority (2018)

(<https://www.ons.gov.uk/file?uri=%2feconomy%2fregionalaccounts%2fgrossdisposablehouseholdincome%2fdatasets%2fregionalgrossdisposablehouseholdincomegdhbylocalauthorityintheuk%2f1997to2016/vcregionalgdhbylareordered.xlsx>; Accessed: 04/12/2019)

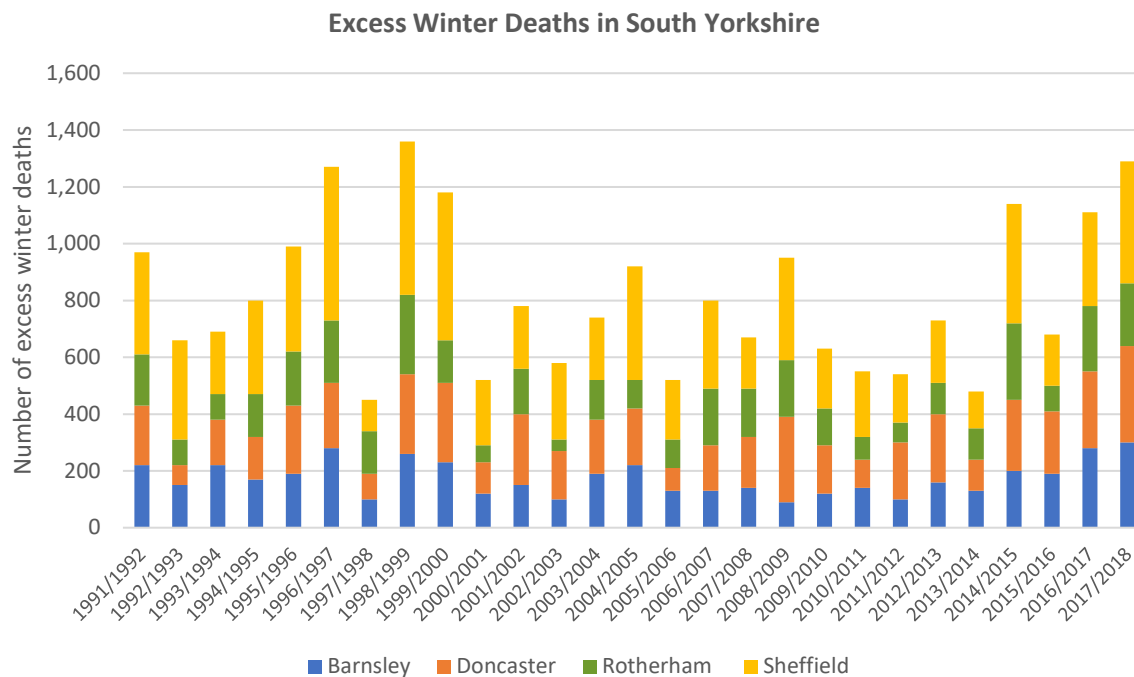


Figure X – Excess winter deaths in South Yorkshire by Local Authority area⁵⁹

⁵⁹ Office of National Statistics - Excess winter mortality in England and Wales: 2018 to 2019 (provisional) and 2017 to 2018 (final) (2019) (<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/2018to2019provisionaland2017to2018final#excess-winter-mortality-across-regions>; Accessed 27/11/2019).

TRANSPORT

This SCR Energy Strategy aims to complement the SCR Transport Strategy⁶⁰ to deliver an innovative, cleaner public transport networks and kick-start further ambitious projects for active travel. It will be a key priority of the SCR Executive Team to ensure that the low carbon elements of the SCR Transport Strategy are aligned and delivered jointly. Projects of this type will lower carbon emissions and have a significant positive impact on both air quality and health. Equally, the future demands on the energy system will be strategically managed.

Modal Shift & Active Travel

In April 2019, Dame Sarah Storey became the SCR Active Travel Commissioner with the brief to champion active travel and enable more people within South Yorkshire to travel on foot, by bike, or by public transport⁶¹. The position of SCR Active Travel Commissioner enhances the targets set in the SCR Transport Strategy to increase trips by: 18% on bus, 100% on rail, 47% on tram, 21% walking and 350% cycling.

The Mayor and Active Travel Commissioner's pledges⁶² are:

1. Being led by communities
2. Enabling walking and cycling rather than encouraging it
3. Requiring infrastructure to meet or exceed requirements
4. Requiring infrastructure to be accessible for all

Following this the Active Travel Interactive Map⁶³ was launched in October 2019 which asked people what they think of the current walking and cycling infrastructure, and what they would like to see in the future.

Recognising the parallels between energy, transport and improvements to our air quality, reduced dependency on the private car is seen as a key part of the solution thereby changing the way people travel, and encouraging more active travel. Where journeys cannot be made via Active Travel or using public transport it needs to be ensured that there is a coherent city-wide network of refuelling infrastructure, helping to increase the uptake of electric and other ultra-low emission vehicles (ULEVs).

Electric Vehicles

In 2015, the UK Government set a target for 'almost every' car and van to be zero emission by 2050. This was followed in 2016 by a plan to ban the sale of diesel and petrol cars and vans by 2040. To meet this target, an interim target was set in the 'Road to Zero Strategy' stating that at least 50% of new car sales and 40% of new van sales will be zero emission by 2030.

Whilst nationally the sales of ULEV cars are increasing at a rapid rate⁶⁴ their overall penetration into the private vehicle market is low⁶⁵. ULEV sales are expected to continue to grow exponentially as market projections suggest EV price equivalence with petrol and diesel (ICEs) by the mid-2020s⁶⁶. At time of writing, the Government have a grant available to help boost the uptake of EVs but the grant for 'plug-in-hybrids' was removed in 2018.

⁶⁰ Sheffield City Region – Transport Strategy (2019) (https://d2xf5riab8wu0.cloudfront.net/wp-content/uploads/2019/03/SCR_Transport_Strategy_11.04.2019.pdf; Accessed: 04/12/2019)

⁶¹ Sheffield City Region – 'Dame Sarah Storey Named as Mayor Dan Jarvis' Active Travel Commissioner' (01 Apr 2019) (<https://sheffieldcityregion.org.uk/dame-sarah-storey-active-travel-commissioner/>; Accessed: 18/12/2019)

⁶² Sheffield City Region – 'Dame Sarah Storey Announces Active Travel Pledges for the Sheffield City Region' (17 Jun 2019) (<https://sheffieldcityregion.org.uk/dame-sarah-storey-announces-active-travel-pledges-for-the-sheffield-city-region/>; Accessed: 18/12/2019)

⁶³ Sheffield City Region – SCR Active Travel Interactive Map (<https://cyclewalkscrmapp.sheffieldcityregion.org.uk/>; Accessed: 18/12/2019)

⁶⁴ 20% increase from 2017 to 2018 (DfT – Vehicle Licensing Statistics: Annual 2018, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/800502/vehicle-licensing-statistics-2018.pdf; Accessed 02/10/2019)

⁶⁵ 2.2% of new registrations in 2018 (DfT – Vehicle Licensing Statistics: Annual 2018, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/800502/vehicle-licensing-statistics-2018.pdf; Accessed 02/10/2019)

⁶⁶ Business, Energy and Industrial Strategy Committee – Electric Vehicles: Driving the Transition (2018) (<https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/383/383.pdf>; Accessed 02/10/2019)

In line with the projections of EV uptake, the EV charging infrastructure is expected to grow in the UK. There are now over 26,000 charging points in over 9,750 locations⁶⁷ an increase of nearly 400% in five years. However, under 5% (1,305) of the UK's EV charging points are in the Yorkshire and Humber. These service around 12,000 plug-in vehicles (REF).

In November 2019, the UK Department for Transport published a table showing the number of public charging devices per 100,000 population. The table shows the wide variation in charge point provision and shows that South Yorkshire has 10 per 100,000, which is one of the lowest allocations nationally⁶⁸.

The National Infrastructure Commission recommends that Government, Ofgem and local authorities roll-out charging infrastructure in line with EVs making up 100% of new vehicles by 2030. National Grid projects that the increase in peak demand from EVs is likely to be in the region of 5GW nationally. Smart charging technologies, vehicle to grid technology and incentives to charge vehicles at off-peak times will reduce the impact. If clusters of EV charge points emerge without sufficient planning and mitigation measures then charging could overload low voltage networks. Yet, Northern Powergrid's recently published tool (REF once public in January) shows which of the low voltage substations will be under strain in different EV uptake scenarios allowing for an immediate overview of where reinforcement will be required.

The University of Sheffield, alongside seven other northern universities, are part of the DecarboN8 network which focusses on surface transport emissions and are leading the 'Digitisation, Demand and Infrastructure' theme. In 2017, road transport alone contributed around 36% of South Yorkshire's total CO₂ emissions. A battery electric vehicle emits during a full functional life, half the amount of CO₂ compared to a conventional reference vehicle.

Hydrogen Vehicles

Hydrogen vehicles are still relatively scarce in the market but are increasing their penetration in areas such as HGVs, buses, trains. A hydrogen-based switch over for HGVs would require approximately 800 refuelling stations to be built across the UK before 2050⁶⁹. Given the strategic road networks (M1, A1(M), and M18) that pass through South Yorkshire, and the iPort located in Doncaster, presents an important economic opportunity in developing the refuelling network. In addition to this, analysis has been carried out by Arup, on behalf of SCR, to investigate the costs and practicalities of introducing hydrogen buses within the South Yorkshire public transport system.

South Yorkshire is already at the forefront of the quickly growing hydrogen economy. Sheffield is home to ITM Power who are creating the largest electrolyser manufacturing facility in the world which – when opened in early-2020 – will be capable of producing 1GW of electrolysers per year⁷⁰. ITM Power's current operations require them to employ around 180 members of staff; this will increase with the demands of the new facility and the recent award of a £500,000 grant from the UK Government to demonstrate the delivery of bulk, low-cost and zero-carbon hydrogen⁷¹. Doncaster also have an innovative electrolyser manufacturer, CPH2, who have plans for significant growth. The electrolysers produced by these local companies are essential for the move towards hydrogen vehicles as they are an integral part of the refuelling infrastructure. Rotherham has the northern-most hydrogen refuelling station in England in operation connected to the UK's largest Hydrogen Mini-Grid System⁷². The refuelling station creates hydrogen gas from water using the power from a 225kW wind turbine making the fuel truly zero carbon 'green hydrogen'⁷³.

⁶⁷ ZapMap Statistics (2019) (<https://www.zap-map.com/statistics/>; Accessed 02/10/2019)

⁶⁸ DfT – Electric vehicle charging devices by local authority (2019) (<http://maps.dft.gov.uk/ev-charging-map/>; Accessed 27/11/2019)

⁶⁹ CCC – 'Net Zero – The UK's contribution to stopping global warming' (2019) (<https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf>; Accessed: 19/12/2019)

⁷⁰ ITM Power – New Factory Update and Senior Production Appointment (22 Jul 2019) (<https://www.itm-power.com/news/new-factory-update-and-senior-production-appointment>; Accessed: 19/12/2019)

⁷¹ ITM Power – 'Gigastack Feasibility Study with Ørsted' (29 Aug 2019) (<https://www.itm-power.com/item/58-project-to-demonstrate-delivery-of-bulk-low-cost-and-zero-carbon-hydrogen-through-gigawatt-scale-pem-electrolysis-manufactured-in-the-uk>; Accessed: 19/12/2019)

⁷² Note: This was developed as part of the International Energy Agency's Hydrogen Technology Collaboration Programme with funding from Yorkshire Forward. The mini-grid has 200kg of hydrogen storage with a 30kW fuel cell system capable of providing back up power to nearby buildings.

⁷³ Note: 'Green' hydrogen is created using electrolysis where the electricity has been generated using renewable sources. 'Blue' hydrogen is created through steam methane reformation where natural gas is split into hydrogen and carbon dioxide using steam; the CO₂ is then captured using CCUS technology. 'Brown' methane is identical to 'blue' hydrogen, but the CO₂ is not captured and is instead released to atmosphere.

Further detail about South Yorkshire’s emerging hydrogen economy and the opportunities that exist can be found in the report ‘Establishing a regional hydrogen economy’⁷⁴ produced by Arup on behalf of the South Yorkshire Hydrogen Network – a collaboration of public and private sector partners.

Air Quality

South Yorkshire faces significant air quality issues with 28 Air Quality Management Areas (AQMAs) across South Yorkshire (Figure X). Poor air quality is linked to a variety of health concerns ranging from short term illness to serious diseases and premature death. The UK Department of Health and Social Care reports that the impact of reducing fine particles has a bigger impact on life expectancy than eliminating passive smoking or traffic accidents (REF). In South Yorkshire an average of 4.7% of all adult deaths can be attributed to PM_{2.5}⁷⁵ air pollution (Barnsley 4.5%, Rotherham 4.8%, Doncaster 5.0%, Sheffield 4.6%) (REF). Individuals who are particularly sensitive and exposed to the most elevated levels of pollution have an estimated reduction in life expectancy of as much as nine years. The impact on health and life expectancy is more significant for some social groups than others; including the most deprived in South Yorkshire.

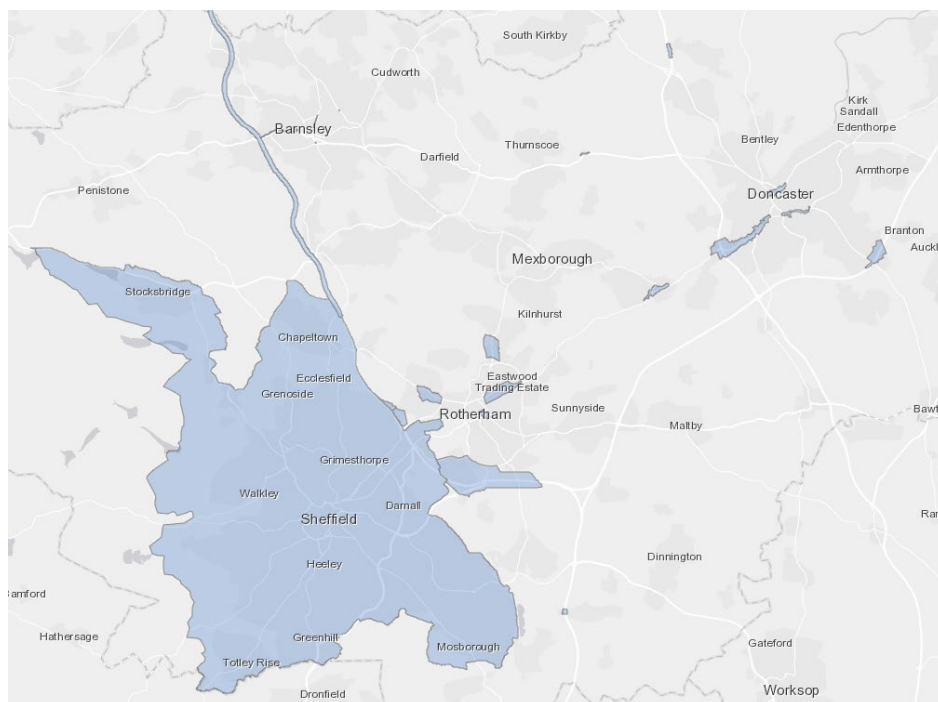


Figure X — Air Quality Management Areas (AQMAs) in South Yorkshire

Across Sheffield alone there are 51 locations where the European Union’s annual average limit value for NO₂ (40µg/m³) has been exceeded in one or more of the three-year periods (2010-2012), and a 30% reduction in NO₂ emissions would be needed in order to comply with the limit value. Analysis indicates that road transport is the single most significant contributor to Sheffield’s NO₂ emissions at these locations therefore reducing exhaust pipe pollutants has an important part to play; including the use of Clean Air Zones (CAZs). The significant air quality issues across South Yorkshire also emphasises the importance of delivering transport networks that encourage shifts to low carbon transport. A move to ultra-low emission vehicles (ULEVs) such as those powered by hydrogen or full-electric would significantly reduce emissions in South Yorkshire.

⁷⁴ Ref – once published

⁷⁵ PM_{2.5} is particulate matter of 2.5 millionths of a metre (2.5µm) in diameter

Sheffield City Council (SCC) and Rotherham Metropolitan Borough Council (RMBC) are undertaking a CAZ Feasibility Study, to ensure compliance with legal thresholds in the shortest possible time. To address the particular challenges in Sheffield a Charging CAZ⁷⁶ has been proposed which would target the most polluting vehicles that do not meet required emissions standards. At the time of writing, the consultation has closed on SCC's proposals that would require improvements to buses, coaches, taxis, HGVs and LGVs from 2021.

This is an important challenge for SCR and, together with the South Yorkshire Passenger Transport Executive, is in a strong position to deliver the pace of change required through the devolved power given by Government and the aims of the SCR Transport Strategy. Mitigating the impact of the motorway network on air quality represents a significant challenge for South Yorkshire and success will be dependent on collaboration with Highways England and national Government.

⁷⁶ Sheffield City Council – Clean Air Zone Outline Business Case (2019) (<https://www.sheffield.gov.uk/content/dam/sheffield/docs/pollution-and- nuisance/air-pollution/clean-air-zone/Sheffield%20and%20Rotherham%20CAZ%20-%20Outline%20Business%20Case.pdf>; Accessed 04/12/2019)

INDUSTRY & COMMERCIAL

South Yorkshire is synonymous with industry; decarbonising this sector while maintaining its competitiveness will be an enormous challenge⁷⁷. However, the challenge also offers an opportunity to both find cost savings and new markets in which to sell.

The manufacture of fabricated metal products is the largest contributor to turnover of businesses with locations in South Yorkshire (REF). This is aligned with the South Yorkshire's industrial heritage with products from this sector feeding into aerospace, automotive, defence and energy sectors – all growth areas under Industry 4.0. Industry 4.0 is characterised by exponential changes to the way we live, work and communicate due to the adoption of cyber physical systems and the Internet of Things, and will lead to much greater digitisation across all industries and aspects of society.

The steel industry is one of the most polluting in the UK, contributing around 12 MtCO₂ to UK emissions in 2017 (REF). The sector employs around 32,000 people (REF) including 9,000 in Yorkshire and Humber (REF). Three of the five electric arc furnaces in the UK are in South Yorkshire which melt scrap steel instead of requiring raw materials. Since they're electrically powered, decarbonising these is integrated with the decarbonisation of the electrical network as a whole. Yet, by investing in on-site renewable generation and battery storage costs can be reduced when generating power but also by purchasing electricity when the price is low and selling electricity to the network when generation is lower than demand. This would also improve resilience against power outages.

Natural gas is used for many of the steel manufacturing processes including re-heating and drying. Hydrogen could be used to decarbonise these processes, but it is likely that a redesign of equipment will need to take place as the combustion of hydrogen produces water vapour (which is detrimental to the drying process) and will need to be removed. The UK Government's proposed Clean Steel Fund⁷⁸ and Low Carbon Hydrogen Production Fund could provide a step-change in this industry, and South Yorkshire is well-placed to capitalise.

Opportunities also exist in other energy intensive industries to use hydrogen including glass manufacture where high temperatures are used to melt the raw materials, and a hydrogen-rich atmosphere is used in the manufacture of float glass. These high energy users typically produce a significant amount of waste heat which can be 'dumped' into a heat network to provide an additional income stream.

There are many opportunities for non-industry to gain from the transition to a net-zero carbon economy. The Clean Growth Strategy (CGS) set out a stretching ambition to support businesses to improve their energy efficiency by at least 20% by 2030 leading to a potential 30% reduction in SME energy bills⁷⁹. Despite this, there remains a large proportion of SMEs who are unaware of how to reduce their energy usage and the extent of savings they could make through implementing resource efficiency measures. Support is therefore required to help businesses reduce the costs involved in initial connection to the energy grid and invest in energy efficiency measures and low carbon heat and power, which could significantly reduce fuel bills for businesses within South Yorkshire, protecting them against rising energy prices.

One of the Missions of the UK Industrial Strategy set by the UK Government was to 'establish the world's first net-zero carbon industrial cluster by 2040 and at least 1 low-carbon cluster by 2030'. Humber are making strides to achieve this goal with the Zero Carbon Humber project⁸⁰ – a collaboration between Drax Group, Equinor and National Grid. As a neighbouring region, South Yorkshire is well placed to build on and support this transformative project.

⁷⁷ "Government must implement an approach to incentivise industries to reduce their emissions through energy and resource efficiency, electrification, hydrogen and CCS in ways that do not adversely affect their competitiveness. In the short-term, this is likely to imply a role for Exchequer funding." (CCC – 'Net Zero – The UK's contribution to stopping global warming' (2019) <https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf>; Accessed: 19/12/2019)

⁷⁸ BEIS – Creating a Clean Steel Fund: Call for Evidence (<https://www.gov.uk/government/consultations/creating-a-clean-steel-fund-call-for-evidence>; Accessed: 19/12/2019)

⁷⁹ BEIS – Energy Efficiency Scheme for Small & Medium Sized Businesses – A Call for Evidence (2019) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785541/energy-efficiency-scheme-smes-cfe.pdf; Accessed 21/11/19).

⁸⁰ Zero Carbon Humber (<https://www.zerocarbonhumber.co.uk/>; Accessed: 19/12/2019)

RESEARCH, DEVELOPMENT & INNOVATION

South Yorkshire has a significant offering with regards to world-leading research, development and innovation. Some of the areas with direct impact on the energy sector have been highlighted in this Section.

UK Atomic Energy Authority (UKAEA)⁸¹

In autumn 2020 the UK Atomic Energy Authority (UKAEA) will open a 2,500m² nuclear fusion research facility at the Advanced Manufacturing Innovation District (AMID) in Rotherham. The facility will bring 40 highly-skilled jobs to South Yorkshire following funding from BEIS and SCR's Local Growth Fund. UKAEA's aim is to produce a conceptual design for a 'Spherical Tokamak for Energy Production' (STEP) reactor by 2024 and ultimately commercialise nuclear fusion as a plentiful source of low carbon electricity⁸². The facility will require specialist metals and materials, providing further opportunities for companies in South Yorkshire and boosting the region's economy.

High Value Manufacturing Catapult⁸³

Established by Innovate UK, the Catapult provides access to world-class research and development facilities and expertise that would otherwise be out of reach for many businesses in the UK. In 2018/19 the Catapult supported 4,650 innovative projects (including almost 2,500 with SMEs) which totalled over £0.5bn. In South Yorkshire, the Catapult has two main centres: the Advanced Manufacturing Research Centre (AMRC), and the Nuclear AMRC, both with capabilities in Advanced Assembly, Automation, Resource Efficient and Sustainable Manufacturing, and Virtual Reality.

Sheffield Hallam University⁸⁴

Sheffield Hallam University (SHU) is one of the largest universities in the UK by student population with over 30,000 enrolled⁸⁵. SHU has thirty research centres spanning a wide range of topics including Health and Social Care, Sport and Exercise Science, and Food Engineering. The Olympic Legacy Park (OLP)⁸⁶ in Sheffield will provide a world-class centre for research and innovation in health and well-being. The Advanced Well-Being Research Centre will be based at the OLP and will be the most advanced physical activity research and development centre in the world. Other research centres at SHU include CRESR and MERI.

CENTRE FOR REGIONAL ECONOMIC AND SOCIAL RESEARCH (CRESR)⁸⁷

CRESR focusses on the impact of social and economic disadvantage and the assessment of policies which aim to address these issues. Sustainability is one of the workstreams of CRESR which is broken down into: housing, place, responses to climate change, and valuation of environmental benefits. Previous work from this research group includes studies into fuel poverty, community energy, heat networks, and the economic benefits of improvements to the natural environment. CRESR has also worked on the 'State of the Coalfields'⁸⁸ report showing the contrast between these communities and other economic areas in the UK.

⁸¹ UKAEA (<https://www.gov.uk/government/organisations/uk-atomic-energy-authority>)

⁸² BEIS – UK to take a big 'STEP' to fusion electricity (03 Oct 2019) (<https://www.gov.uk/government/news/uk-to-take-a-big-step-to-fusion-electricity>; Accessed: 20/12/2019)

⁸³ High Value Manufacturing Catapult (<https://hvm.catapult.org.uk/>)

⁸⁴ Sheffield Hallam University (<https://www.shu.ac.uk/>)

⁸⁵ Higher Education Statistics Agency (HESA) – Where do HE students study? (<https://www.hesa.ac.uk/data-and-analysis/students/where-study>; Accessed: 20/12/2019)

⁸⁶ Sheffield Olympic Legacy Park (<https://sheffieldolympiclegacypark.co.uk/>)

⁸⁷ CRESR (<https://www4.shu.ac.uk/research/cresr/>)

⁸⁸ CRESR – The State of the Coalfields 2019 (<https://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/state-of-the-coalfields-2019.pdf>; Accessed: 19/12/2019)

MATERIALS AND ENGINEERING RESEARCH INSTITUTE (MERI)⁸⁹

MERI is an interdisciplinary research institute dedicated to addressing industrial challenges. MERI encompasses groups including: the Centre for Automation and Robotics Research which has research areas such as artificial perception and integrated manufacturing; the Thin Films Research Centre which has a research group focussing on solar energy conversion; and Hallam Energy which has expertise, and provides consultancy in, areas including industrial heat recovery working with international companies such as Nestlé to improve the efficiency of their operations.

University of Sheffield⁹⁰

The University of Sheffield is a world-class University ranked 12th overall in the UK, and part of the prestigious Russell Group. Boasting no fewer than eight energy related research centres as part of the Research Institute for Energy: one of the Europe's largest energy research institutes with over 120 academics and 250 PhD students undertaking energy research and innovation. The University owned Advanced Manufacturing Research Centre (AMRC) – based in Rotherham – was the winner of the 2007 Queen's Anniversary Prize for Higher and Further Education⁹¹.

THE ADVANCED RESOURCE EFFICIENCY CENTRE (AREC)⁹²

AREC is a facility to promote collaboration between industry and academia to meet the challenge of resource efficiency and sustainability across supply chains by proposing new ways of reducing risk for partners in overcoming the challenges of resource availability. AREC has the infrastructure in place to work in partnership with industry to address world challenges in supply chain resource sustainability, focussing on four key areas: advanced materials and manufacturing, energy and nuclear; water; and agritech and food.

UK CARBON CAPTURE AND STORAGE RESEARCH CENTRE (UKCCSRC)⁹³

UKCCSRC brings together a membership of over 1,400 world-class academics, industrial experts, regulators, Government and others in the sector to provide a national focal point for the research and development of carbon capture and storage. The University of Sheffield is a core institution of UKCCSRC and hosts the Pilot-scale Advanced CO₂ Capture Technology (PACT)⁹⁴ facilities which are the national specialist research and development facilities for carbon capture technology research for power generation and industrial applications.

CENTRE FOR RESEARCH INTO ELECTRICAL ENERGY STORAGE AND APPLICATIONS (CREESA)⁹⁵

CREESA is one of the UK's leading research centres on all aspects of electrical energy storage and home of the 'Centre for Doctoral Training in Energy Storage and its Applications'. It includes the unique Battery Energy Storage Demonstrator – a 2MW grid connected research facility utilising a lithium titanate battery at a substation in the West Midlands. More recently the facility has been set up as a test bed for Industry 4.0, in collaboration with industrial partners, for battery digitisation research with reference to the Internet of Things and cloud computing.

FACTORY 2050⁹⁶

Factory 2050 is a 6,730m² building dedicated to research into robotics and automation, integrated large volume metrology, digitally assisted assembly and manufacturing informatics by the Integrated Manufacturing Group. In partnership with Boeing, Factory 2050 is particularly active in the aerospace sector but also delivers impact across the automotive, healthcare, infrastructure, energy, and food and drink sectors.

⁸⁹ MERI (<https://www.shu.ac.uk/research/specialisms/materials-and-engineering-research-institute>)

⁹⁰ University of Sheffield (<https://www.sheffield.ac.uk/>)

⁹¹ Award was presented for 'working with leading companies to improve efficiency in aero engines' (<https://www.queensanniversaryprizes.org.uk/winners/researching-and-embedding-new-manufacturing-techniques-in-aerospace-engineering/>; Accessed 28/11/2019)

⁹² AREC (<https://www.sheffield.ac.uk/arec>)

⁹³ UKCCSRC (<https://ukccsrc.ac.uk/>)

⁹⁴ PACT (<https://pact.group.shef.ac.uk/>)

⁹⁵ CREESA (<https://www.creesa.co.uk/>)

⁹⁶ Factory 2050 (<https://www.amrc.co.uk/facilities/factory-2050>)

NUCLEAR ADVANCED MANUFACTURING RESEARCH CENTRE (NAMRC)⁹⁷

Based in Rotherham, the NAMRC is part of the High Value Manufacturing Catapult and is a collaboration of academic and industrial partners from across the nuclear supply chain, with the mission of helping UK manufacturers win work. The NAMRC has developed its position at the heart of the UK's civil nuclear manufacturing industry and is leading on the research and development of small modular reactors (SMRs) and the Fit4Nuclear⁹⁸ (F4N) benchmark. The F4N programme helps companies measure their current operations against the standards required to supply the UK's new generation of nuclear power stations and take the necessary steps to enter this £40bn market.

SHEFFIELD SIEMENS GAMSEA RENEWABLE ENERGY (S²GRE)⁹⁹

Siemens established its UK wind turbine generator R&D competence centre at the University of Sheffield in 2009. The research centre specialises in providing the overall technology, architecture and design of onshore and offshore wind turbine generators for the global market. The collaboration translates into real world solutions with benefits to both the wind industry and the environment. The University of Sheffield are also the lead for the EPSRC Prosperity Partnership: A New Partnership in Offshore Wind¹⁰⁰.

TRANSLATIONAL ENERGY RESEARCH CENTRE (TERC)¹⁰¹

The TERC is a state-of-the-art testing facility for energy technologies which will be instrumental in the UK's transition to a low carbon economy and will help businesses stay at the forefront of this rapidly growing market and ensuring that research and development leadership in clean energy is retained locally. The TERC will dramatically broaden the scope of the pilot-scale testing facilities currently available in the UK and include equipment for conventional energy, carbon capture, utilisation and storage, biomass, hydrogen, renewable energy, energy storage and smart grids.

URBAN FLOWS OBSERVATORY¹⁰²

The Urban Flows Observatory seeks to understand how the physical (energy and material resources) metabolism of cities can be effectively measured, understood and utilised. To do this, mobile and fixed sensors will be deployed around Sheffield to improve our understanding of the city. The aim is to provide the methodologies and tools to manage and analyse urban data streams. From this, a robust evidence base will be developed to facilitate local and national decision making, supporting the creation of zero carbon, healthy, happy cities.

URBAN INSTITUTE¹⁰³

The Urban Institute is a research centre focussed on how cities adapt to the challenges and opportunities posed by deepening urbanisation, technological innovation and constraints on resources. Academics at the Urban Institute undertake interdisciplinary research to analyse the socio-technical, political and ecological dynamics of urban environments. Mistra Urban Futures¹⁰⁴ is an international project in which the Urban Institute are participating where the United Nations Sustainable Development Goals are being used to understand whether urbanisation is taking place in a sustainable way.

⁹⁷ NAMRC (<https://namrc.co.uk/>)

⁹⁸ Fit4Nuclear (<https://namrc.co.uk/services/f4n/>)

⁹⁹ S²GRE (<https://www.sheffield.ac.uk/eee/research/groups/electrical-machines-and-drives/siemens-gamesa>)

¹⁰⁰ New Partnership in Offshore Wind (NPOW) (<https://npow.group.shef.ac.uk/>)

¹⁰¹ TERC (<https://www.sheffield.ac.uk/news/nr/translational-energy-research-centre-sheffield-university-leading-experts-uk-work-with-collaborate-1.852523>)

¹⁰² Urban Flows Observatory (<https://urbanflows.ac.uk/>)

¹⁰³ Urban Institute (<http://urbaninstitute.group.shef.ac.uk/>)

¹⁰⁴ Mistra Urban Futures (<https://www.mistraurbanfutures.org/en>)

KEY CHALLENGES

1. Far fewer people are employed in the low carbon sector in South Yorkshire than other parts of the North of England.
2. Forecasts suggest South Yorkshire will capture only a minimal amount of potential economic growth and new jobs in the low carbon and renewable energy sector.
3. Current infrastructure is under-utilised and deployment of technologies to improve resilience is slow.
4. Reducing the energy demand of South Yorkshire's industry will require significant investment from central government.
5. South Yorkshire generates <20% of the electricity that it consumes.
6. Two-thirds of dwellings in South Yorkshire have an Energy Performance Certificate rating below band C with over one-quarter being in the lowest bands (E, F or G).
7. There are over 1,200 excess winter deaths each year in South Yorkshire and 10.6% of households are in fuel poverty.
8. South Yorkshire has significantly fewer community energy schemes compared to other regions.
9. Poor air quality blights parts of South Yorkshire with 28 designated Air Quality Management Areas (AQMAs).
10. Road transport is the single largest contributor to CO₂ emissions in South Yorkshire.

POLICIES & INTERVENTIONS

Introduction

Beyond the adoption of this SCR Energy Strategy a range of projects will be developed, started, or accelerated depending upon their current position within the pipeline. Complementary projects will form programmes of work which will ultimately seek to meet the overall goals and targets of this Strategy. Some of these projects/programmes will be led by SCR; some the SCR will contribute to; and others which SCR will seek to influence. Delivery will therefore rely on a whole host of public and private organisations and individuals.

This Section of the Strategy gives more information about the policies that we believe – based on analysis of the evidence provided in **Section X** and refined based on stakeholder input – will address the Key Challenges provided in **Section X**. The key strategic interventions that are currently known to SCR, and how they will be brought forwards within the national and sub-national context, will also be detailed below.

Local Interventions

Our local interventions need to build on those being developed nationally. Globally, there is an increasing focus on energy being generated locally in a decentralised way rather than being reliant on large-scale electricity generation. This provides a number of opportunities within South Yorkshire for the development of schemes which generate renewable electricity. For heat, the national focus is in three areas: electrification, hydrogen, and heat networks. Since South Yorkshire has a history of developing and running an efficient heat network this is an obvious area for expansion. However, it would be foolish to place all eggs in one basket. Fourth and fifth generation heat networks make use of low temperatures which then allows for the incorporation of electrically-driven heat pumps, either at the source and/or user-end. South Yorkshire also has a head-start with world-leading expertise in hydrogen generation via electrolysis. Hydrogen provides two key contributions: generating hydrogen for both heat and transport fuel, and it can be used as a storage medium to help balance the national electricity network by generating hydrogen when there is a surplus of renewable electricity being generated rather than paying generators to not produce electricity.

There will likely be a spatial element to any local interventions owing to the natural resources and current assets that already exist within South Yorkshire. For example, the wind resource is far more plentiful in some areas than others making the case for onshore wind – which is already the cheapest form of electricity generation¹⁰⁵ – much more viable and cost-effective.

SCR take a principled approach to any direct investment and would aim to prioritise those opportunities where it is possible to recover the investment to re-invest in further decarbonisation schemes or energy related infrastructure.

The remainder of this section provides an indication of some of the local interventions that could be implemented by SCR or public or private partners. Each of the interventions are guided by our policies and support the commitments set out in the Strategic Economic Plan and those made in the Mayoral manifesto.

Policies

A – ENCOURAGE CLEAN AND EFFICIENT GROWTH IN OUR LOCAL BUSINESSES AND INCREASE THE NUMBER OF JOBS IN THE LOW CARBON ENERGY SECTOR.

To achieve this we will:

- Provide support to businesses to help them: reduce the costs involved in initial connection to the gas and electricity network, and invest in energy efficiency measures and low carbon heat and power.
- Support SMEs to become aware of, and apply for, low carbon innovation funding provided from the UK Government

¹⁰⁵ BEIS – Electricity generation cost report (Annexes 1-3) (2019)

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/803605/Generation_Costs_Report_2016_Annexes.xlsx; Accessed 03/12/2019)

and elsewhere.

- Establish South Yorkshire as an innovation incubator where energy innovations can be taken from concept, to prototype, to trial, through to full-scale production.
- Aim to create regular networking and CPD opportunities for energy professionals within our SMEs to allow skills and knowledge transfer, and further learning.

B – INVEST IN THE TRAINING AND UPSKILLING OF THOSE WHO WILL BE DESIGNING, INSTALLING AND MAINTAINING OUR FUTURE ENERGY SYSTEMS.

To achieve this we will:

- Assist businesses and young people to develop the skills they need to take advantage of opportunities in the energy sector.
- Encourage those working in sectors with similar skill sets to re-train and/or gain additional qualifications such that they can also operate in the low carbon sector.
- Work to develop an apprenticeship scheme for those who are looking to work within specific areas of the low carbon energy sector where we expect high growth e.g. hydrogen, heat networks, heat pumps, and electrical engineering.

C – PROMOTE INDUSTRIAL DECARBONISATION AND CLUSTER SCHEMES TO DELIVER ENERGY AND COST SAVINGS, AND DRIVE INNOVATION IN KEY GROWTH AREAS.

To achieve this we will:

- Support industry to take advantage of central government funds including the Industrial Energy Transformation Fund and the Clean Steel Fund.
- Work with colleagues in the Humber region to assist with their development of the 'Zero Carbon Humber' net-zero industrial cluster and linking businesses in South Yorkshire to the arising opportunities.
- Work with organisations to implement cluster schemes within hubs of local economic activity which deliver collective energy and financial savings, and drive innovation in key growth areas.
- Seek opportunities where partnerships can be created between developers of energy efficient technologies and industrial companies willing to test innovative technologies on-site.

D – UTILISE AND/OR REPURPOSE OUR CURRENT INFRASTRUCTURE AND NATURAL RESOURCES TO DECARBONISE THE ENERGY SUPPLY.

To achieve this we will:

- Partner with the Coal Authority to understand the sub-surface conditions of former mining areas and prioritise those that have the best potential for minewater energy schemes.
- Work with Local Energy Hubs to establish the regulatory requirements to bring minewater energy schemes to fruition.
- Plan the heat network required to distribute the low cost, low carbon minewater energy to those buildings in close proximity.
- Work with residents and business owners to build an understanding of the potential benefits of a minewater energy scheme.
- Look for, and bring forward, other opportunities that have an energy, decarbonisation, and economic benefit.

E – IMPROVE OUR ENERGY RESILIENCE THROUGH THE ADDITION OF LOCAL LOW CARBON GENERATION AND STORAGE, AND THE INCREASED USE OF SMART GRIDS.

To achieve this we will:

- Investigate energy storage opportunities within South Yorkshire including for energy intensive industries to make them more efficient and helping to balance the load on the local electricity/gas distribution network.
- Consider 'meanwhile uses' of public land and buildings to generate further power from renewable sources for South Yorkshire.
- Seek to develop and deploy a zero-carbon smart microgrid within South Yorkshire; this could include working with Northern Powergrid as part of their Smart Grid Enablers project.
- Consider further opportunities for onshore wind as part of South Yorkshire's renewable energy mix; subject to local

planning, environmental constraints, and community engagement.

F – DRIVE INVESTMENT HEAT DECARBONISATION INCLUDING HEAT NETWORKS, THE ELECTRIFICATION OF HEAT AND HYDROGEN FOR HEAT.

To achieve this we will:

- Support the expansion of existing and development of new heat networks throughout South Yorkshire particularly low temperature (4th and 5th generation) heat networks.
- Work with organisations and industries who expel waste heat to connect into a heat network.
- Consider improvements to heat networks including increased monitoring, thermal storage, and the physical connection of heat networks into a heat grid.
- Work with gas network operators to understand the potential for mixing hydrogen into the natural gas supply.
- Plan the roll-out of heat pumps – particularly in areas not connected to the gas network.

G – SUPPORT AND INVEST IN WIDESPREAD ENERGY EFFICIENCY IMPROVEMENTS TO EXISTING DWELLINGS ACROSS SOUTH YORKSHIRE.

To achieve this we will:

- Identify ‘priority’ dwellings/households i.e. those with biggest need for improvement (e.g. solid walls, fuel poor, elderly, deprived areas, etc.).
- Use devolution funds to create a ‘Mayor’s Community Energy Fund’ to help priority households with capital costs of installing low carbon heating/cooling and energy efficiency measures.
- Work with partners to develop innovative ways to quickly assess the required improvements to dwellings and their rapid deployment.

H – ENSURE THAT NEW HOUSING WITHIN SOUTH YORKSHIRE IS OF A HIGH QUALITY IN TERMS OF ENERGY USE AND EFFICIENCY.

To achieve this we will:

- Work with developers and Local Planning Authorities to strongly encourage the adoption of higher energy efficiency standards, beyond those of Part L of the UK Building Regulations, towards the levels required for the Passivhaus standard.
- Focusing the SCR Housing Fund to supporting housing developments with high energy efficiency standards and/or low carbon heating systems.
- Seek to create an off-site, modular construction supply chain within the South Yorkshire which focusses on creating quality, low-carbon housing at scale.

I – ENABLE COMMUNITIES TO DEVELOP LOCAL ENERGY SCHEMES AND PROVIDE OPPORTUNITIES FOR RESIDENTS OF SOUTH YORKSHIRE TO INVEST IN ENERGY INFRASTRUCTURE.

To achieve this we will:

- Encourage and support community energy schemes in which residents can invest and benefit with low risk. Schemes could include (but are not limited to) solar farms, onshore wind farms, hydro power, low carbon heat, or electric vehicle infrastructure.
- Work closely with Community Energy England to identify opportunities for community energy schemes within South Yorkshire.
- Ensuring that the profits from community energy schemes are reinvested locally to broaden the impact of chosen interventions and create a circular economy/investment fund.

J – ENABLE A MODAL SHIFT AWAY FROM INDIVIDUAL CAR USE TO PUBLIC TRANSPORT, CYCLING AND WALKING.

To achieve this we will:

- Work towards delivering the pledges laid out by the Mayor and Active Travel Commissioner, and the shared priorities set out in the SCR Transport Strategy.
- Provide sustained investment in high-quality cycling and walking infrastructure.
- Develop a plan for, and roll-out, Low Traffic Neighbourhoods across South Yorkshire.

K – DELIVER A LOW CARBON TRANSPORT NETWORK INCLUDING A ZERO CARBON PUBLIC TRANSPORT NETWORK.

To achieve this we will:

- Deliver a zero-carbon public transport network, which requires upgrading the bus and taxi fleets, and other public vehicles, and supporting decarbonisation programmes for our railways.
- Consider the expansion of the ECO Stars Fleet Recognition Scheme to encourage HGV, Bus, Coach and Taxi operators to improve efficiency, reduce fuel consumption and cut their emissions.
- Support pan-Northern schemes to electrify railways and extend EV charging infrastructure along pan-Northern routes.

L – ACCELERATE THE DEPLOYMENT OF ULTRA-LOW EMISSION VEHICLES, AUTONOMOUS VEHICLES AND RELATED INFRASTRUCTURE.

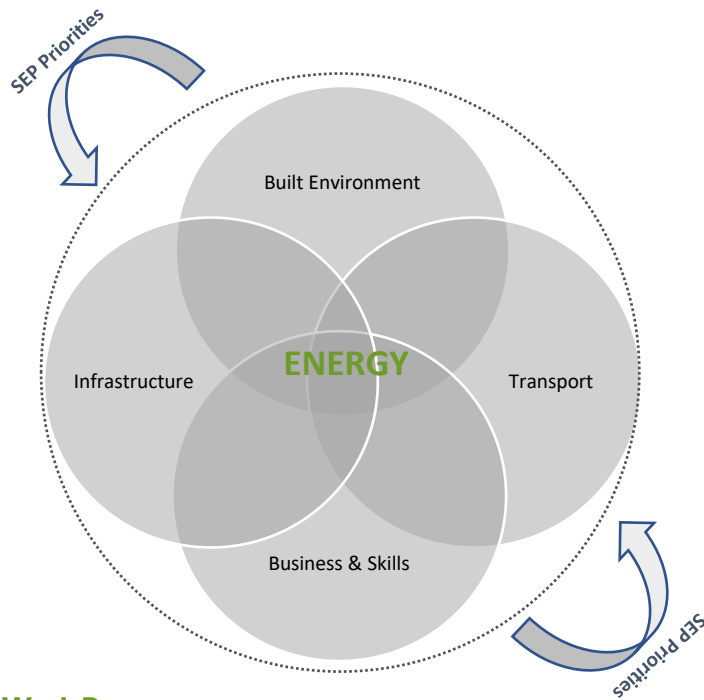
To achieve this we will:

- Invest in expanding the network of EV charging points and hydrogen refuelling stations across South Yorkshire in a strategic way to ensure full coverage.
- Encourage private vehicles using our roads to be ULEVs, and to be used primarily for trips that cannot be made by alternatives, such as public transport, walking and cycling.
- Work with partners to introduce and enforce clean air zones; supporting them in delivering cuts in emissions through encouraging sustainable modes of transport and reducing the need to travel.
- Encourage freight to shift from road to rail or canal boat; and where this is not possible, encourage those road vehicles to be electric, hydrogen, or using a first/last mile service to reduce the number of delivery vehicles in urban centres.

DELIVERY OF THE STRATEGY

Introduction

Implementing this Energy Strategy will require joint working between the Sheffield City Region (SCR) Mayoral Combined Authority (MCA), Local Enterprise Partnership (LEP), local authorities, Central Government, private organisations, charitable/community bodies, and individual residents of South Yorkshire. Some of the schemes that are implemented following publication of this strategy will be brought forward directly from private organisations who are looking to optimise their working procedures and become more efficient. Yet, there will be schemes that will need some funding or directional support by the public sector including the SCR LEP and MCA where relevant – subject to agreement and the appropriate due diligence.



Developing Future Work Programmes

To ensure that the Goals, Policies and Targets of this ambitious Energy Strategy are achieved, an Evaluation Framework has been created by the Carbon Trust to ensure that ongoing and future projects around South Yorkshire are aligned with SCR strategic priorities. Any project requiring the input of the SCR will be initially assessed using this Evaluation Framework (Figure X) to inform consideration onto any SCR project pipeline through the appropriate SCR Governance arrangements and due diligence processes.

We will therefore use this Evaluation Framework as a 'first filter' to developing a project pipeline / programme within South Yorkshire, in liaison with partners, scheme sponsors and stakeholders. By its very nature, the scheme pipeline will be a fluid and will adapt as the low carbon energy market grows and shifts, and as technological changes take place. It will allow new projects and innovations to be considered in the context of our low carbon principles.



Figure X: Evaluation Framework for potential energy schemes

Governance Structure

This SCR Energy Strategy has been developed by Sheffield City Region Local Enterprise Partnership and Mayoral Combined Authority following with support from the Department for Business, Energy and Industrial Strategy; initial evidence gathering and reporting by The Carbon Trust; and input from a large number of stakeholders from around South Yorkshire and beyond. These stakeholders include: local authority partners, private sector organisations, charitable bodies, academic institutions, community groups, and individuals. It is these stakeholders and their projects that will ultimately help deliver this Energy Strategy.

Where the SCR is taking a part, or is taking a leading role within a project, particularly where financial assistance is involved, projects will be subject to the SCR Governance arrangements and due diligence processes.

The SCR Infrastructure Board will oversee and monitor progress in delivering the SCR Energy Strategy, reporting to the SCR Local Enterprise Partnership and Mayoral Combined Authority. However, the promotion, funding, project development, and implementation of projects and programmes will rely on a whole range of partners and stakeholders to deliver, including Central Government.

A project ‘Steering Group’ will be created to provide oversight and direction for the programme(s) as a whole. They will comprise of representatives of relevant projects and others who are able to advise, enable and support project and programme delivery. The Steering Group(s) will report regularly to the SCR Infrastructure Board.

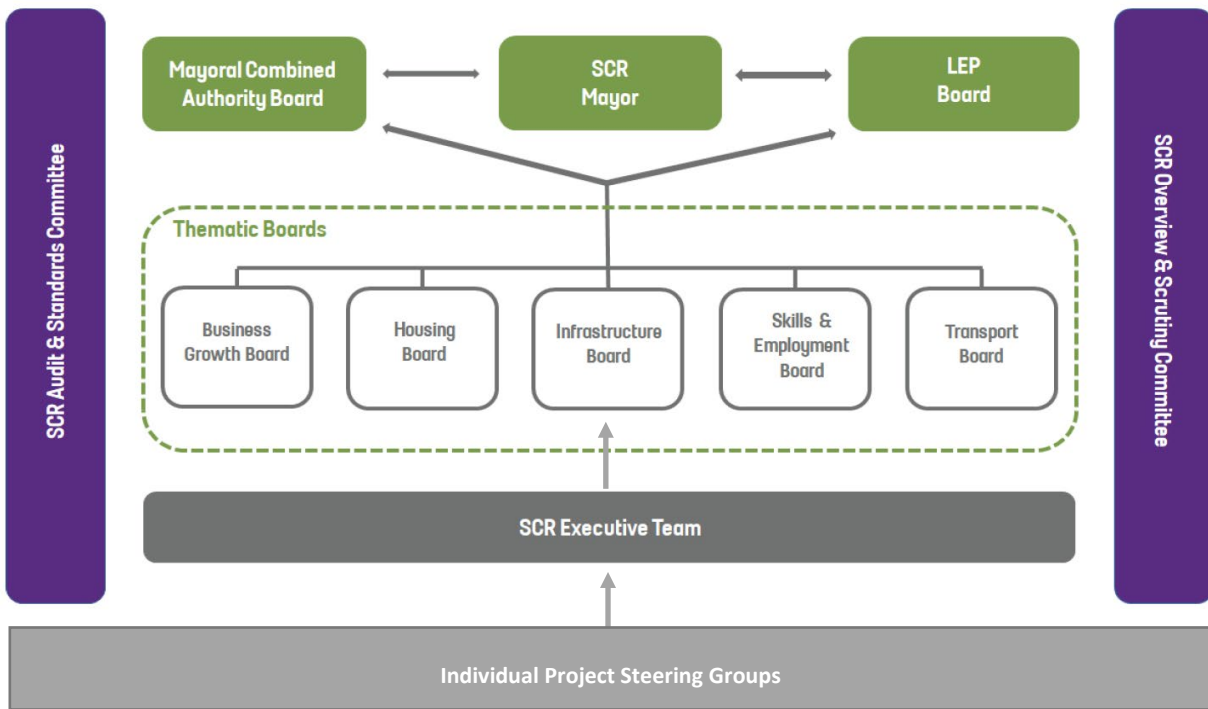


Figure X: Sheffield City Region decision making structure

CLIMATE TARGETS

In 2019, SCR commissioned Ricardo Energy & Environment to undertake analysis which would result in a science-based carbon budget being developed for South Yorkshire and the specific actions that would be required to stay within that budget. There were three phases to the commission: a top-down analysis, a bottom-up analysis, and an economic analysis.

The top-down analysis gives an understanding of what South Yorkshire’s ‘fair share’ of the 2015 Paris Agreement target but not the achievability of that target. The bottom-up analysis has assessed deliverability to give confidence that the target, whilst stretching and ambitious and reflecting the nature of the climate emergency, is also achievable. The economic analysis has then assessed the impact on jobs, GVA and productivity of the possible pathways to decarbonisation.

South Yorkshire's Carbon Budget

The analysis by Ricardo Energy & Environment (REF) concludes that the overarching carbon budget for South Yorkshire between 2020 and 2100 is 44.7 MtCO₂. At 2017-rates, this would be emitted in under seven years. To make progress towards remaining within that budget, annual emissions reductions of 13.2% is required across the whole of South Yorkshire.

In line with the UK-level targets, only Scope 1 and Scope 2 emissions are included within this budget. These include agriculture, fuel combustion for heating, waste, industrial processes, transport and generated electricity. However, Scope 3 emissions are excluded meaning emissions from aviation and shipping do not form part of this budget.

Policy Targets

Draft Headline policy targets to be inserted once the Consultants have completed their quality assurance process in line with the net-zero target.. refer to the carbon reduction curve diagram below:

Insert carbon reduction curve diagram

FOLLOWING CONSIDERATION BY THE SCR LEP OF THE POSSIBLE SCENARIOS SET OUT IN THE THEMATIC TABLES BELOW, A PREFERRED DESIRED PATHWAY WILL BE CONFIRMED TO DELIVER OUR ENERGY AND CLIMATE CHANGE AMBITIONS

In the following tables, Scenario A represents the most ambitious targets which will achieve the goal of remaining within the carbon budget. If the chosen path deviates from Scenario A in one thematic area, then another thematic area must exceed the target to remain on the decarbonisation pathway.

In the power sector, the decarbonisation scenarios are summarised in **Table X**.

Thematic Table X – Decarbonisation scenarios for the power sector

| | Solar PV | Solar Thermal¹⁰⁶ | Onshore Wind |
|----------|---|--|---|
| A | An installed capacity of 0.432 GW by 2025 and 1.312 GW by 2040. | Approx. 23,000 installations per year for next 20 years. | An installed capacity of 0.248 GW by 2025 and 0.921 GW by 2040. |

¹⁰⁶ Note: This assumes household numbers rise to approximately 671,000 by 2040

| | | | |
|----------|---|--|---|
| B | An installed capacity of 0.265 GW by 2025 and 0.688 GW by 2040. | Approx. 6,700 installations per year for next 20 years | An installed capacity of 0.272 GW by 2025 and 0.740 GW by 2040. |
| C | An installed capacity of 0.154 GW by 2025 and 0.303 GW by 2040. | No additional installations | An installed capacity of 0.197 GW by 2025 and 0.240 GW by 2040. |

For residential buildings, the decarbonisation scenarios are summarised in [Table X](#).

Thematic Table X – Decarbonisation scenarios for the housing sector

| | Insulation | Lighting and appliances | Heating |
|----------|--|---|--|
| A | <p>500,000 homes to receive additional draught proofing by 2040.</p> <p>465,000 homes to receive triple glazing by 2040.</p> <p>250,000 homes to receive additional loft insulation by 2040.</p> <p>100,000 homes to receive cavity wall insulation by 2040.</p> <p>125,000 homes to receive solid wall insulation by 2040.</p> <p>New homes to be built close to the PassivHaus standard.</p> | <p>All domestic cooking to use electricity.</p> | <p>80-90% of households have a heat pump.</p> <p>Remaining homes heated using a combination of gas boilers (biogas/hydrogen), electric heating, geothermal and district heating.</p> <p>No new fossil fuel boilers after 2040.</p> |
| B | <p>72,000 homes to receive additional loft insulation.</p> <p>44,000 homes to receive cavity wall insulation.</p> <p>18,000 homes to receive solid wall insulation.</p> | <p>Continued improvement in lighting and appliance efficiency.</p> <p>No new gas cooking appliances installed from 2030.</p> | <p>Additional 403,000 homes with heat pumps.</p> <p>106,000 homes on heat networks</p> |
| C | <p>Additional 30,000 homes to receive floor insulation.</p> <p>50,000 homes to receive triple glazing.</p> <p>New homes built to 2006 insulation standards.</p> | <p>No change to current cooking split of approximately 47% electricity and 53% gas.</p> <p>For lighting and non-cooking appliances, current trends towards more energy-efficient equipment.</p> | <p>Existing current high percentage of gas boilers. Newer technologies will continue to become more efficient and the gas network is likely to have a higher proportion of biogas and/or hydrogen so emissions would be expected to fall but would not reach zero.</p> |

For commercial buildings, the decarbonisation scenarios are summarised in **Table X**.

Thematic Table X – Decarbonisation scenarios for the commercial sector

| | Lighting and appliances | Heating |
|----------|--|--|
| A | Overall demand will decrease by 30% from 2007 baseline. 90% of lights are high efficiency LEDs. 100% of cooking appliances to be electric. | 80-90% of buildings have a heat pump. Remaining buildings heated using a combination of gas boilers (biogas/hydrogen), electric heating, geothermal and district heating. No new fossil fuel systems after 2040. |
| B | Continued improvement in lighting and appliance efficiency. No new gas cooking appliances installed from 2030. | Completely decarbonised heat in commercial buildings by 2050. Gas used for peak heating demand in heat networks is decarbonised by shifting to hydrogen. |
| C | Business as usual for cooking, lighting and other appliances. Increase in energy demand of 25%. | Newer technologies will continue to become more efficient and the gas network is likely to have a higher proportion of biogas and/or hydrogen so emissions would be expected to fall but would not reach zero. |

For commercial buildings, the decarbonisation scenarios are summarised in **Table X**.

Thematic Table X – Decarbonisation scenarios for the transport sector

| | Road Modal Shift (% change relative to 2020) | Road transport demand (% change relative to 2020) | Electrification (% share of fleet) |
|----------|---|--|---|
| A | 10% reduction in car miles by 2030 and 25% by 2040 | 25% reduction in car miles by 2030 and 25% by 2040 10% reduction in freight miles by 2030 and 30% by 2040 | 100% by 2035 |
| B | 5% reduction in car miles by 2030 and 15% by 2040 | 15% reduction in car miles by 2030 and 20% by 2040 6% reduction in freight miles by 2030 and 20% by 2040 | 100% by 2040 |
| C | 2% reduction in car miles by 2030 and 5% by 2040 | 2% reduction in car miles by 2030 and 5% by 2040 3% reduction in freight miles by 2030 and 10% by 2040 | 100% by 2040 |

IMPACT ON JOBS, GVA AND PRODUCTIVITY

<<Analysis still ongoing>>

DRAFT ENERGY STRATEGY OVERVIEW

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Colin Blackburn

Assistant Director Housing, Infrastructure & Planning

**Sheffield
City Region**

BACKGROUND & CONTEXT



Climate Change Act 2008

Legislating for a 80% reduction in GHGs by 2050.

Paris Agreement 2015
Limiting warming to 2°C above pre-industrial levels – but ambition to limit to 1.5°C



A Clean Growth Grand Challenge was included in the UK Industrial Strategy leading to the Clean Growth Strategy in 2017.

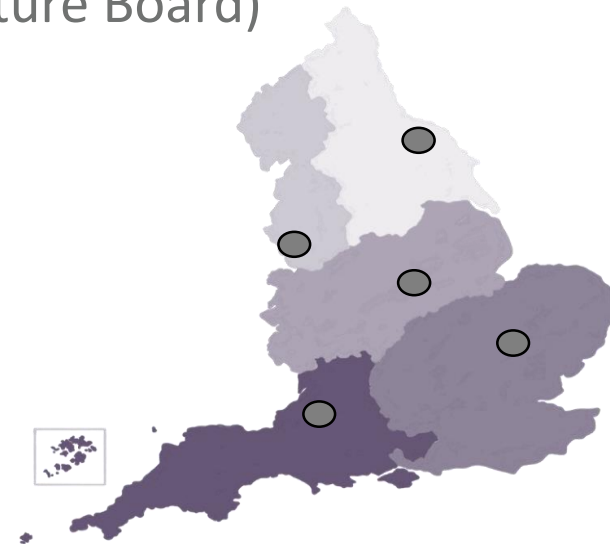


Climate Change Act 2008

Amended to legislate for 'net-zero' emissions in 2019.

PREPARATION PROCESS

- Regional Econometrics Phase 1 – Energy Economic Baseline Report
- Carbon Trust Phase 2 – Technologies Options Appraisal
- Carbon Trust Phase 3 – Energy Strategy Development
- Post-Phase 3 – SEP alignment; re-structuring; evidence update; & LEP boundary change
- Overseen by SCR Infrastructure Board (& previously Housing & Infrastructure Board)
- Four Stakeholder Workshops (50+ attendees)
- University of Sheffield Provocation Report
- Carbon Targets and Future Scenarios
- Jointly funded with BEIS as part of 5 Regional Energy Hubs programme

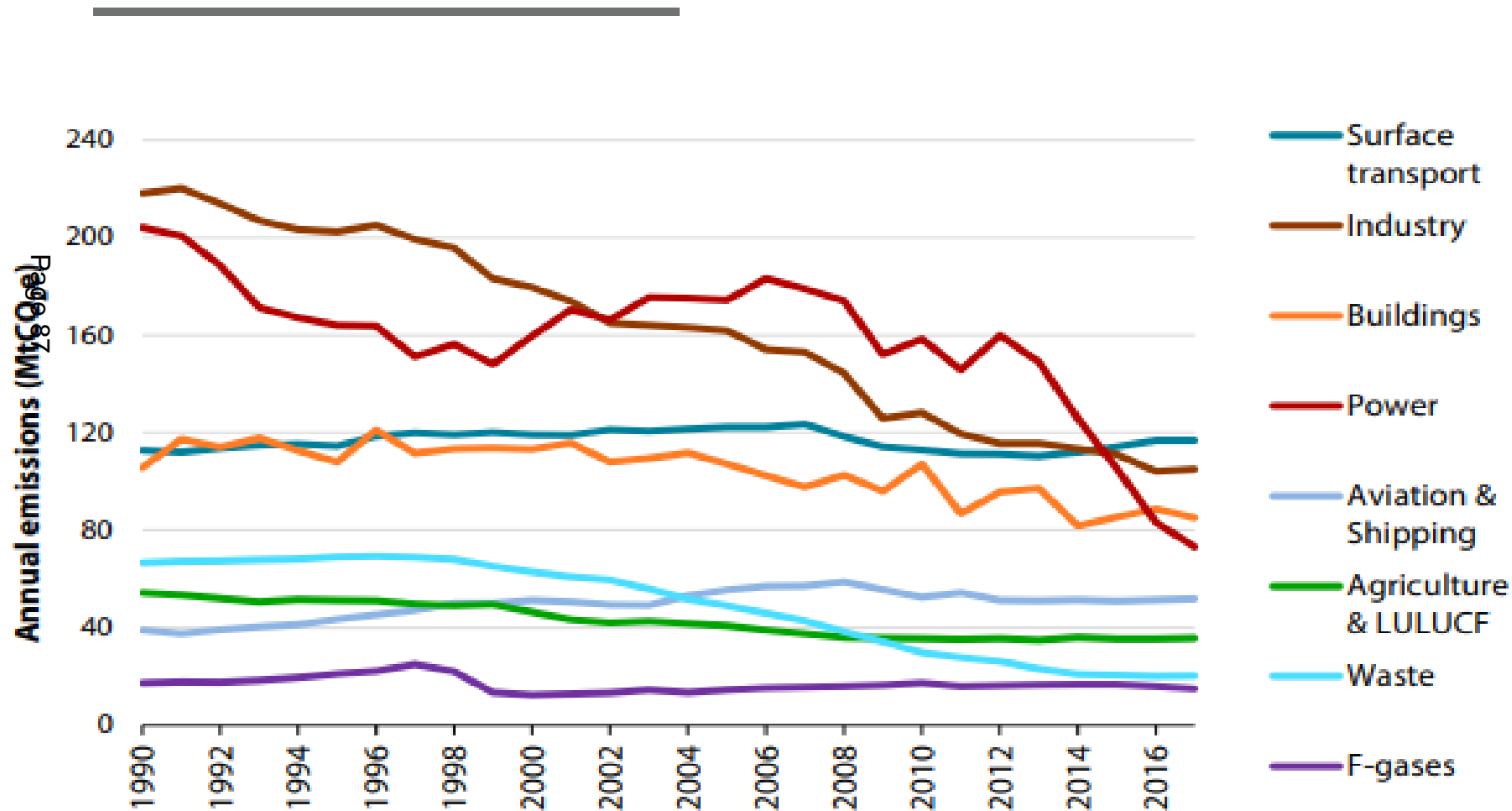


EVIDENCE BASE

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Sheffield
City Region

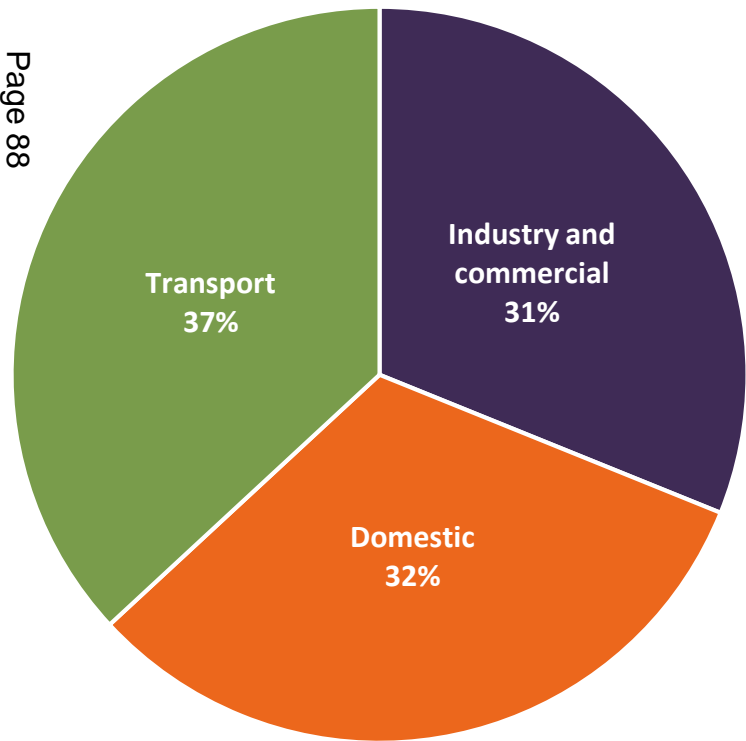
UK DECARBONISATION



- Significant progress in the decarbonisation of the power sector.
- Decline of UK industry driving the decarbonisation.
- Transport has had limited success.

EMISSIONS

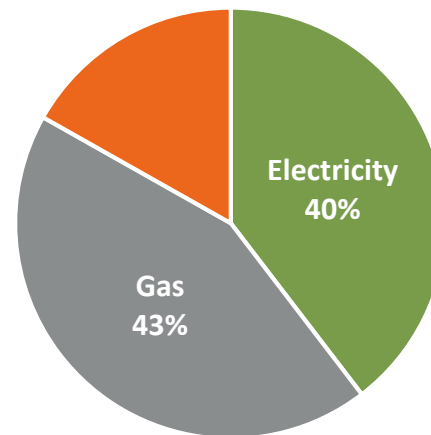
Total CO₂ Emissions



Page 88

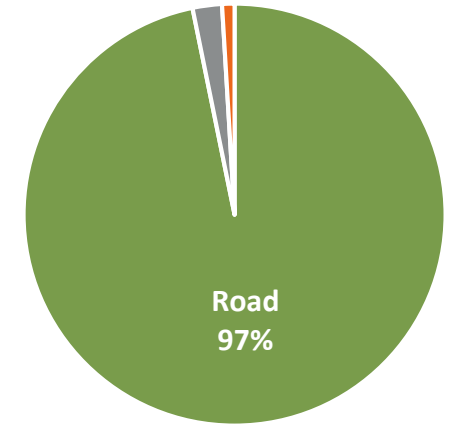
■ Industry and commercial ■ Domestic ■ Transport

Industrial & Commercial CO₂ Emissions



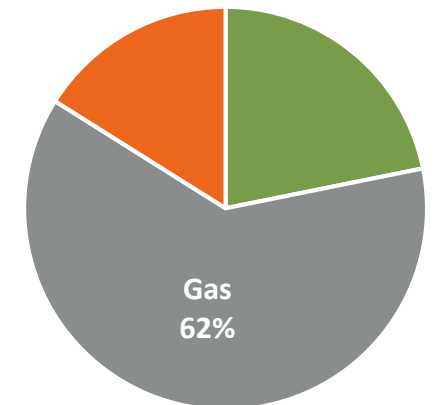
■ Electricity ■ Gas ■ Other

Transport CO₂ Emissions



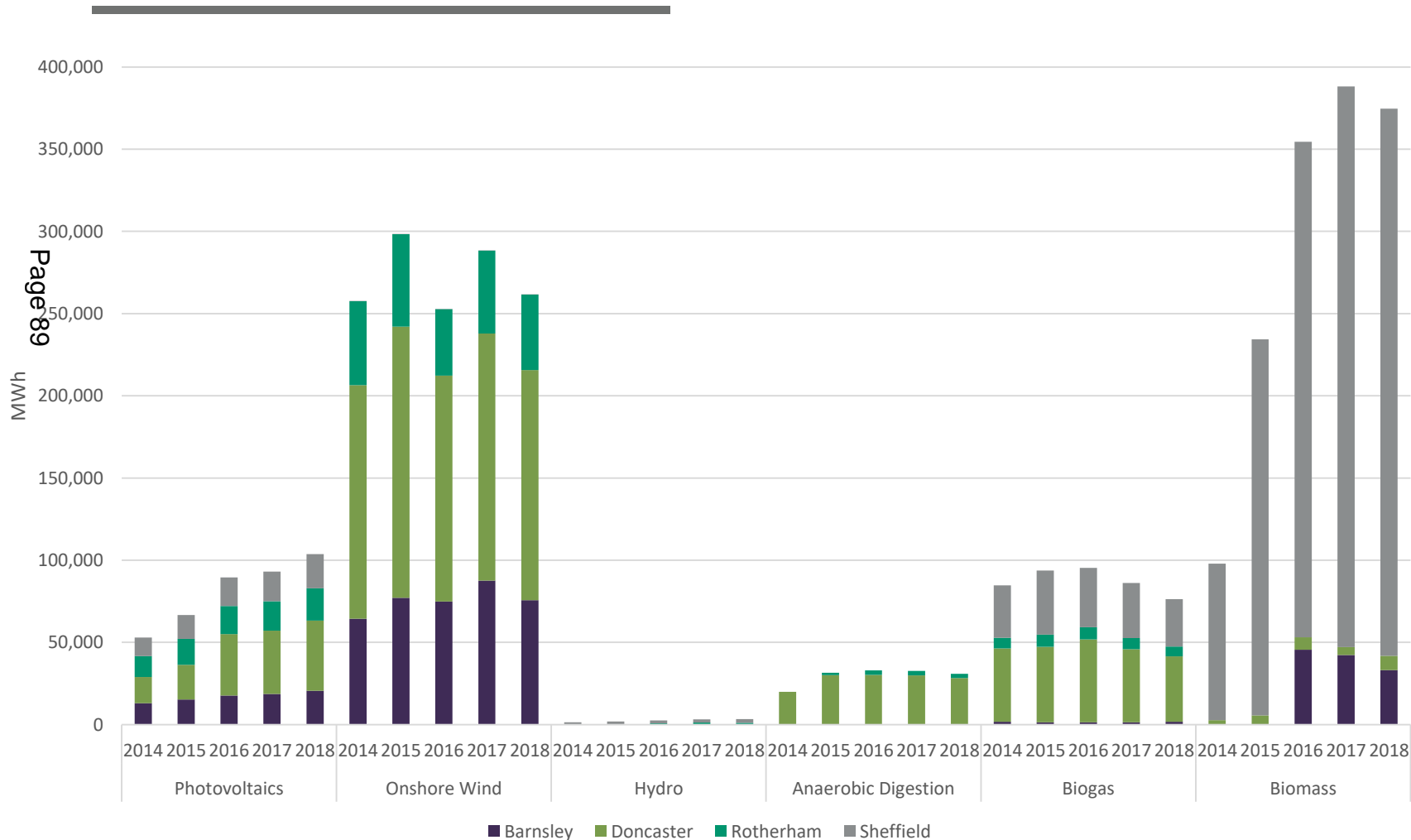
■ Road ■ Diesel railways ■ Other

Domestic CO₂ Emissions



■ Electricity ■ Gas ■ Other

ELECTRICITY GENERATION



- No 'traditional' electricity generation in South Yorkshire.
- Biomass and onshore wind are the largest generators.
- Less than 20% of electricity requirement is generated in the region.

BUILT ENVIRONMENT

Home energy performance score in South Yorkshire (2005-2016)

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Frequency



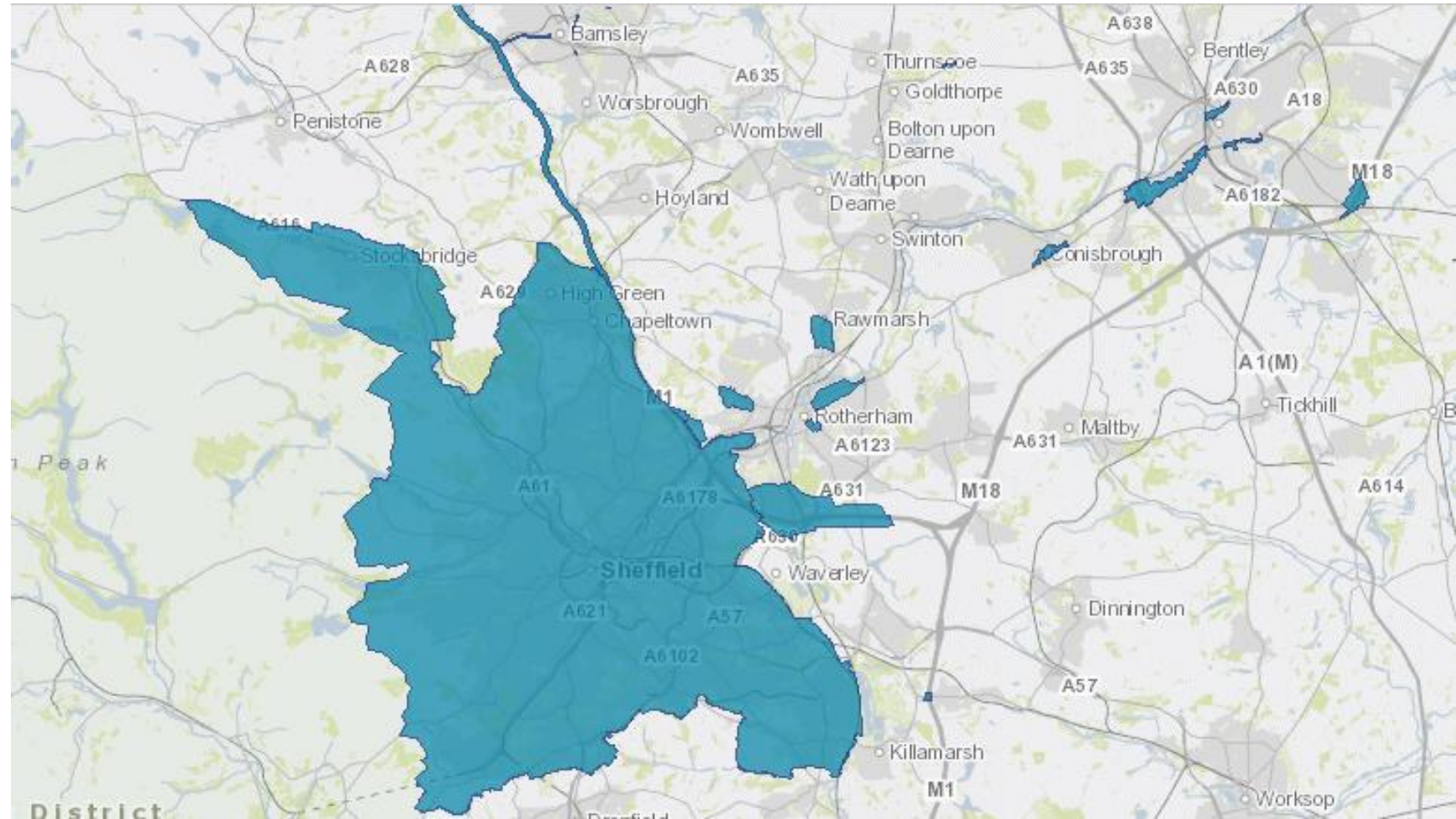
EPC Score

- 62,000 households in fuel poverty - more prevalent in more deprived communities.
- 1,290 Excess Winter Deaths in 2017/18

AIR QUALITY

28 Air Quality Management Areas in South Yorkshire.

- Poor air quality linked directly to emissions and energy (mainly petrol/diesel) use.



DRAFT ENERGY STRATEGY

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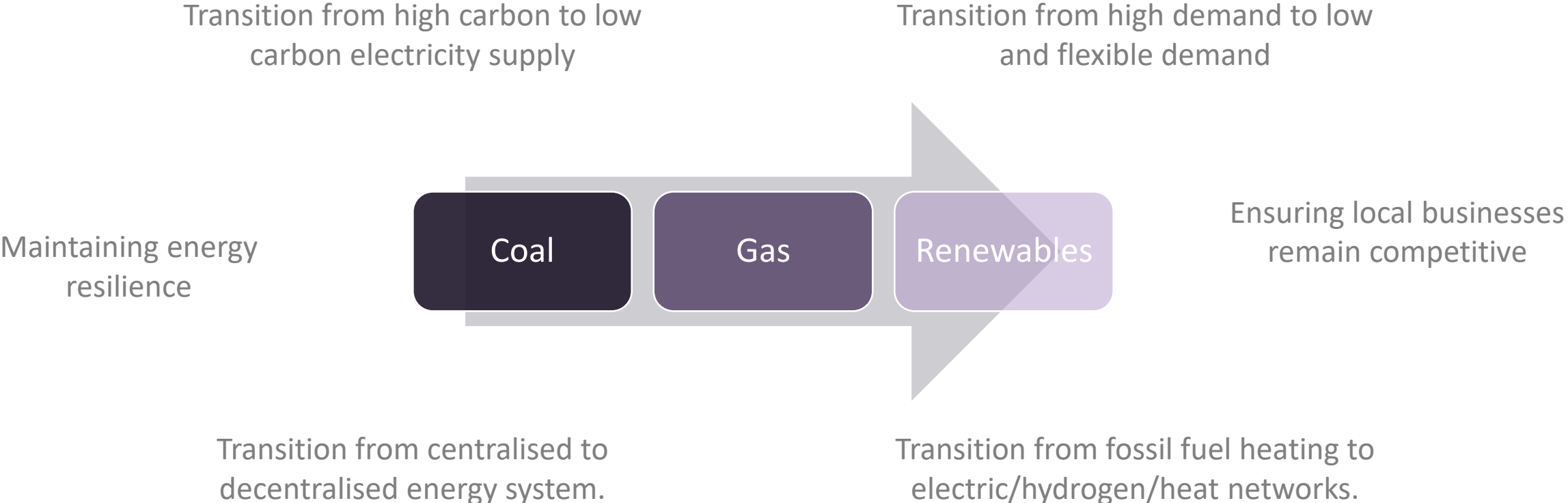
Sheffield
City Region

VISION

Sheffield City Region to be recognised as the **“Green Heart of Great Britain”** with:

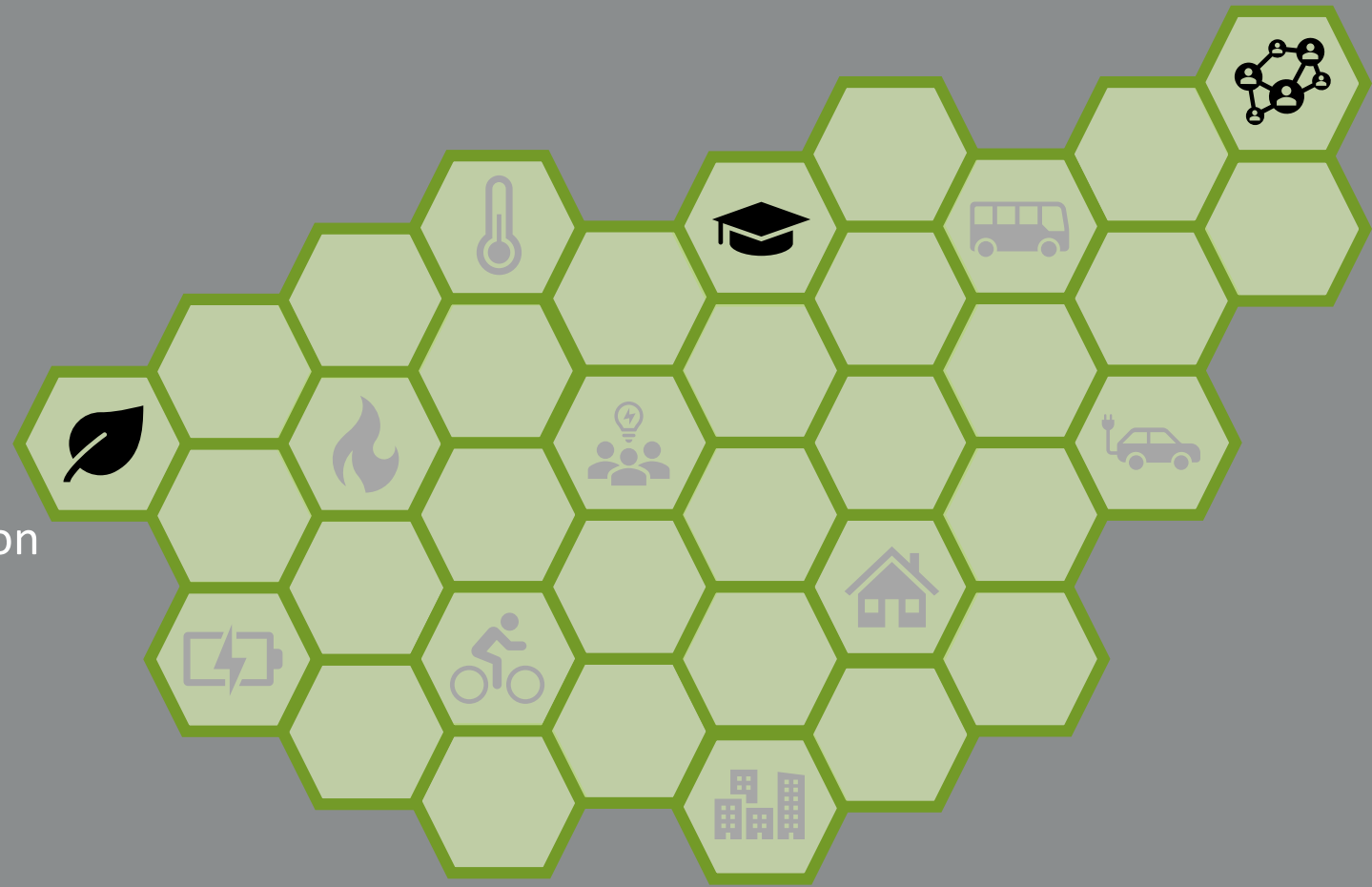
A clean, efficient and resilient energy system, which supports a healthier environment for people to live, work and visit, and which drives our transition to a low carbon economy.

KEY PRINCIPLES



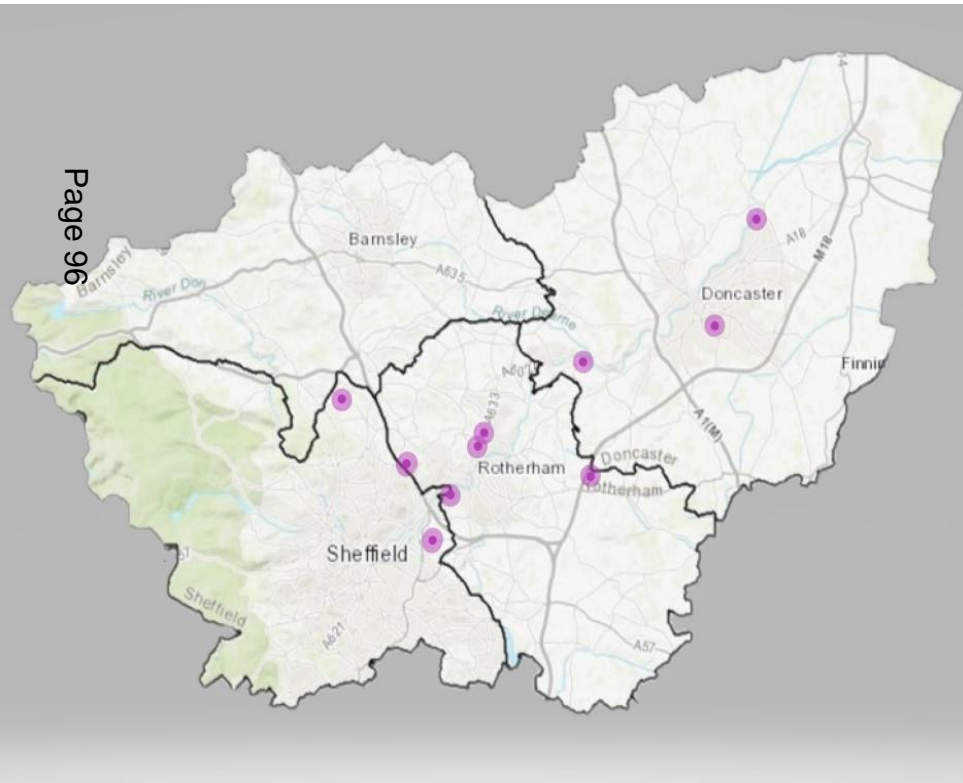
GOALS & POLICIES

- **Goal 1:**
 - Drive clean growth and decarbonisation in our local businesses and industry whilst maintaining their competitiveness.



| | |
|---|---|
|  | Encourage Clean & Efficient Business Growth |
|  | Train and Upskill the Energy Workforce |
|  | Promote Industrial Decarbonisation |

EFFICIENT BUSINESS GROWTH

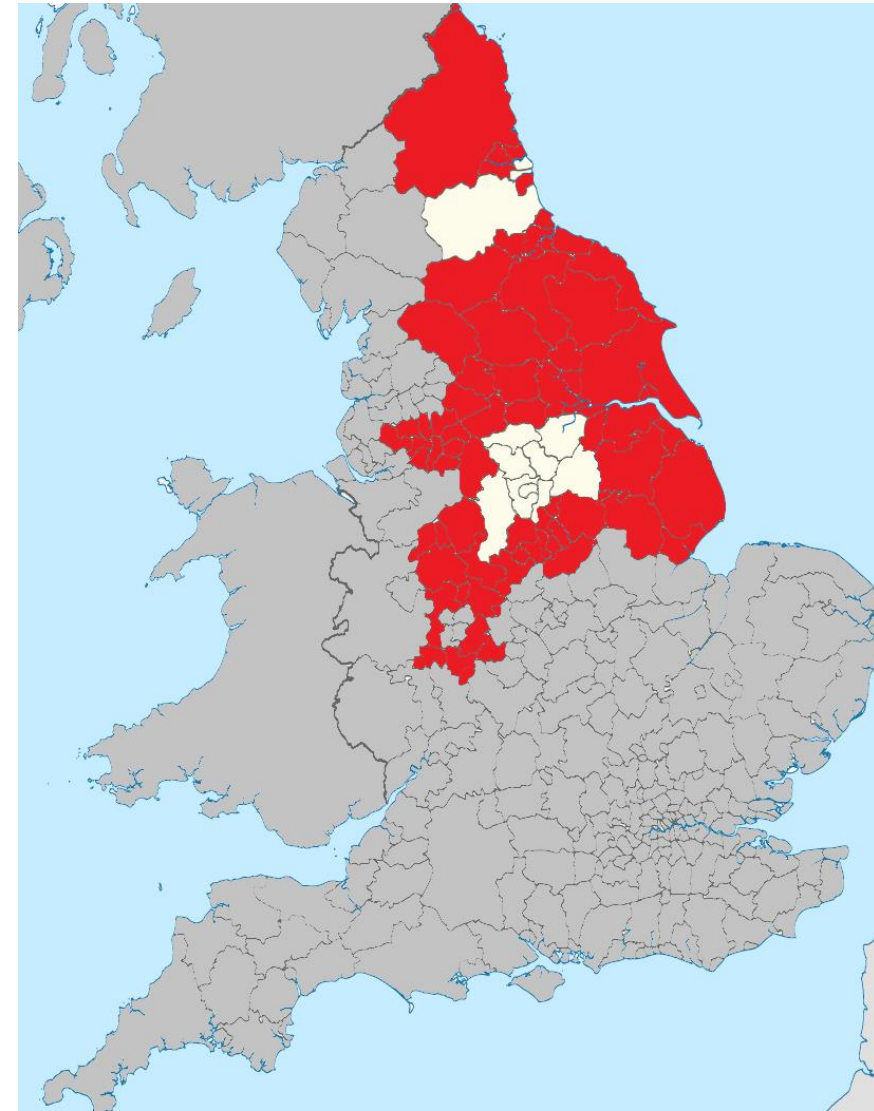


← Provide Energy Resilience

Inward/further investment opportunities restricted by energy constraints.

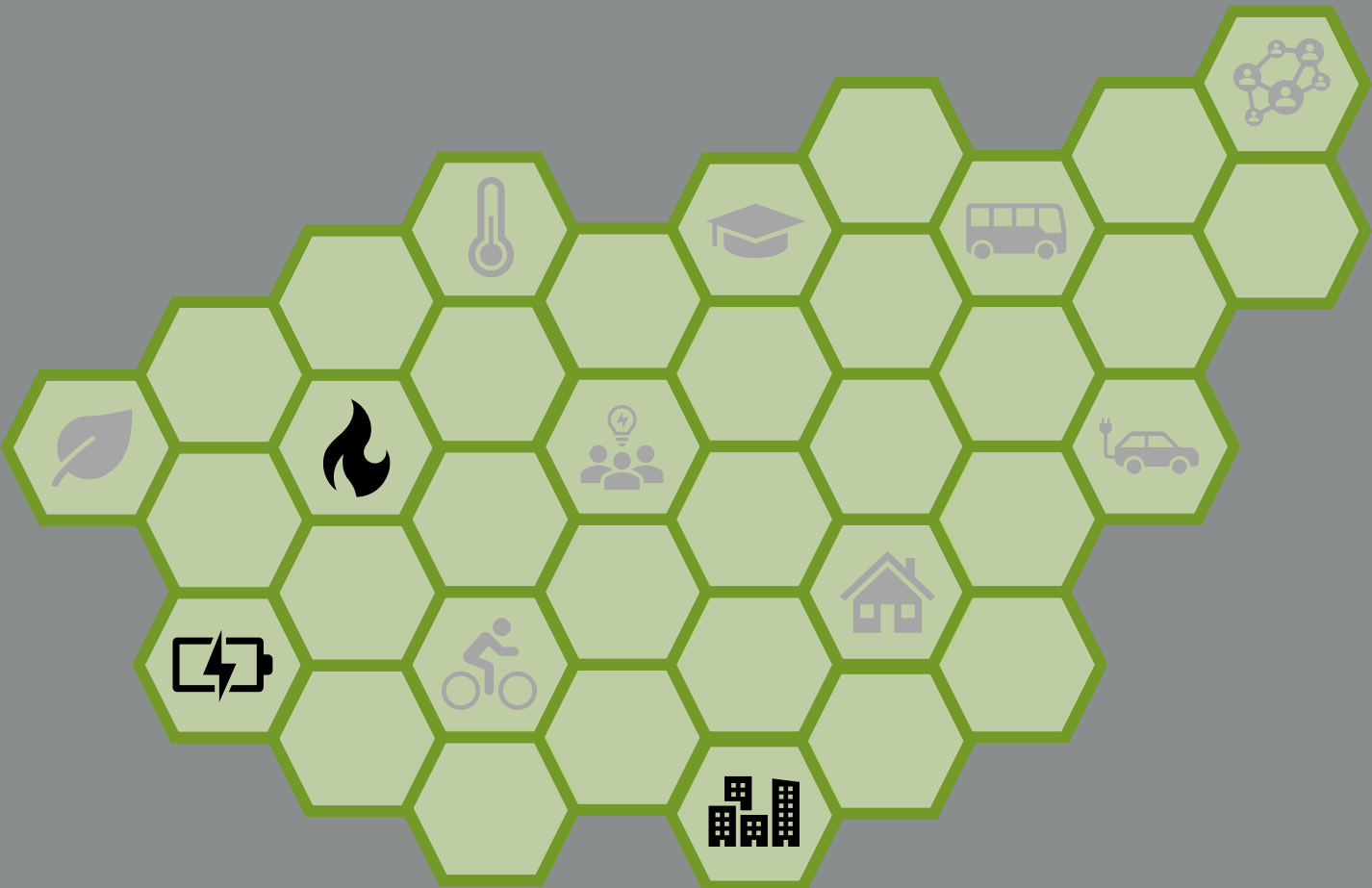
Provide Business Support →




Areas (in red) that offer SMEs energy efficiency support.



GOALS & POLICIES

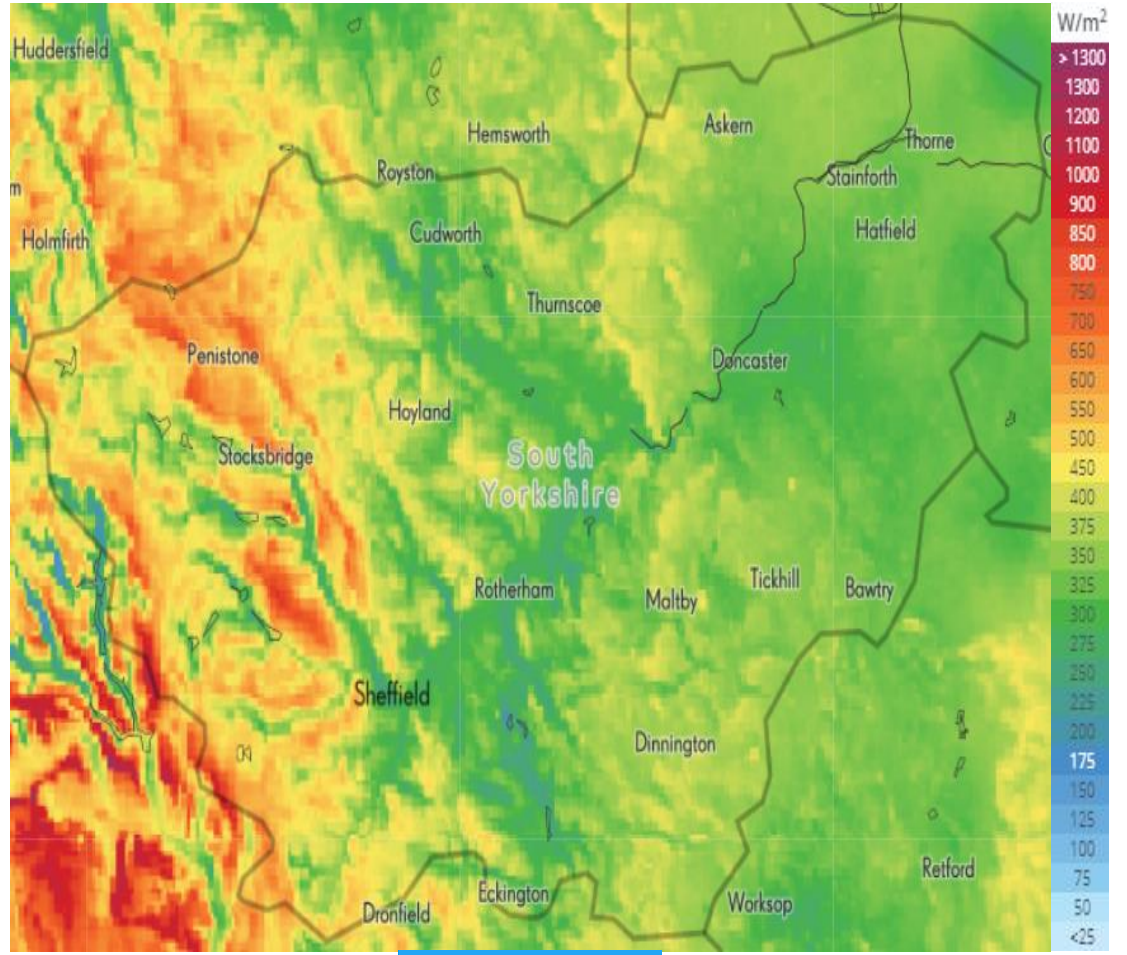
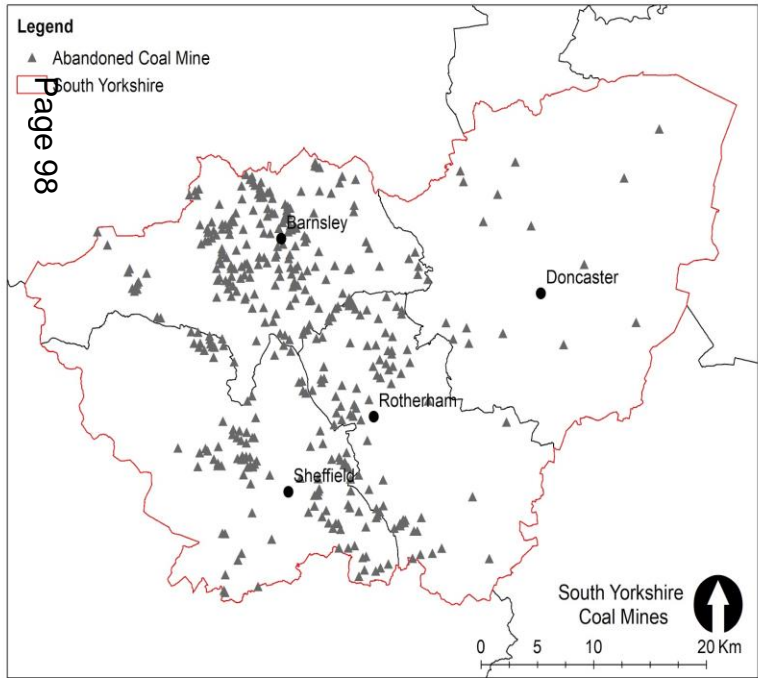
- **Goal 2:**
 - Promote investment and innovation in low carbon energy generation, distribution and storage.



| | |
|---|--|
|  | Utilise Current Infrastructure |
|  | Enhance Energy Resilience |
|  | Drive Investment in Heat Decarbonisation |

HEATING AND COOLING FROM MINES




ONSHORE WIND GENERATION



GOALS & POLICIES

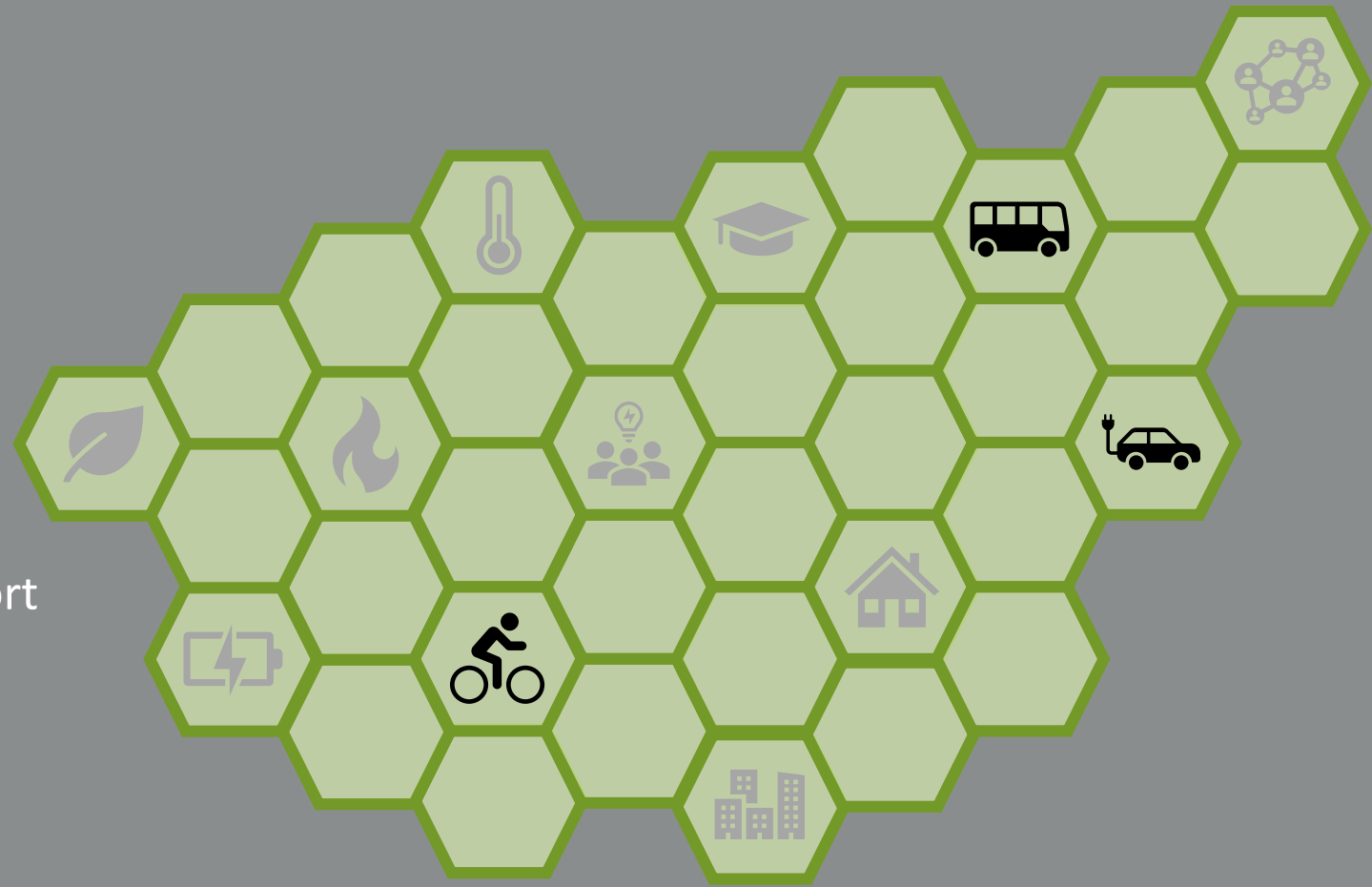
- **Goal 3:**
 - Improve the energy efficiency and sustainability of our built environment, and encourage communities to be part of the transition.






| | |
|---|--|
|  | Improve the Efficiency of Existing Dwellings |
|  | Increase the Standard of New Build Dwellings |
|  | Enable Community Energy Schemes |

GOALS & POLICIES

- **Goal 4:**
 - Accelerate the transition to ultra-low emission vehicles (ULEVs) and transport systems through modal shift and supporting infrastructure.



| | |
|---|---|
|  | Inspire Modal Shift Towards Active Travel |
|  | Deliver a Clean Transport Network |
|  | Accelerate the Uptake of ULEVs |

CHARGING INFRASTRUCTURE

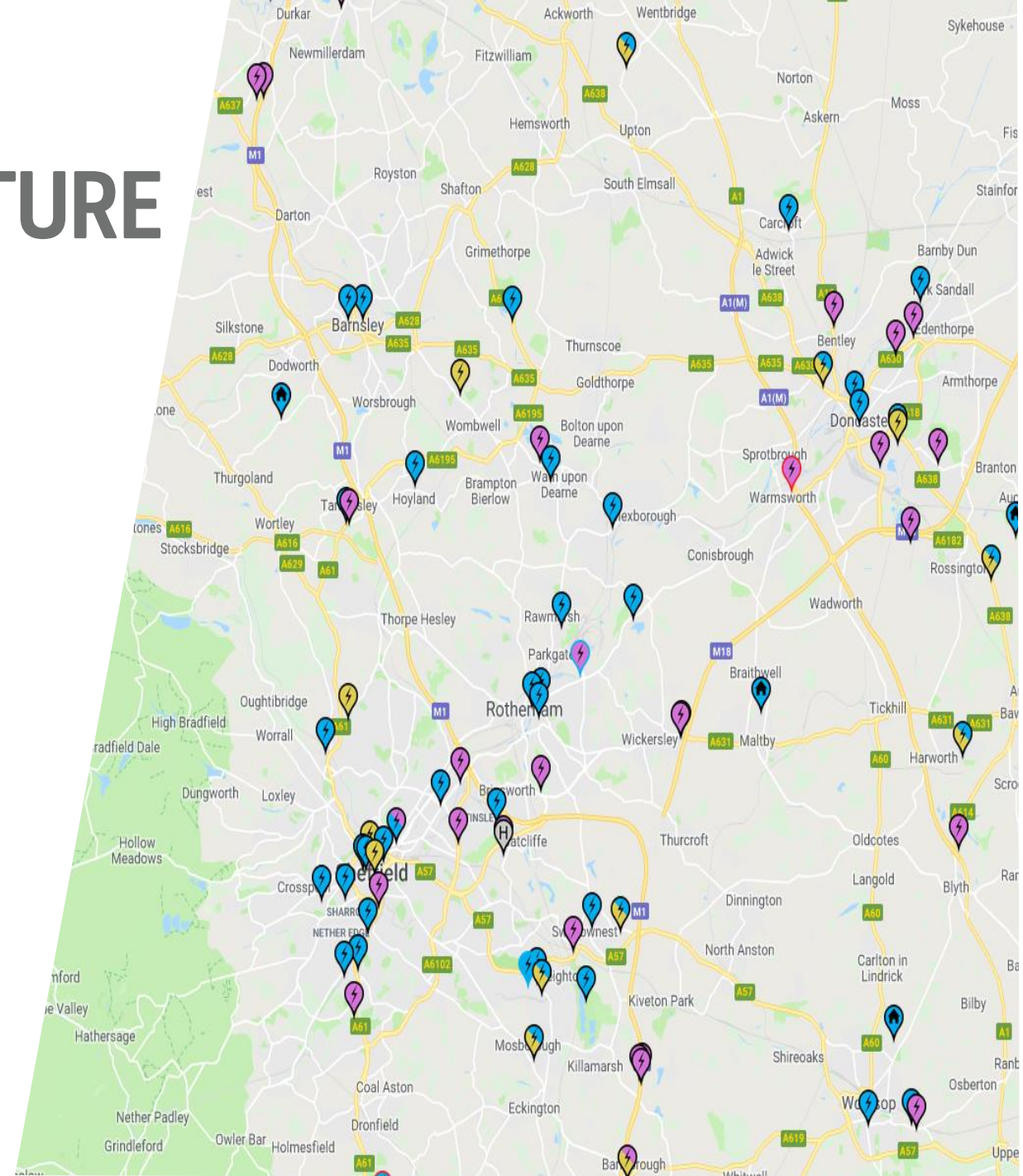


Buses | Trucks | Trains | Ferries

- Buses: 30kg/day
- Trucks: 75 – 400kg/day
- Trains: 180kg/day
- Ferries: 500kg/day

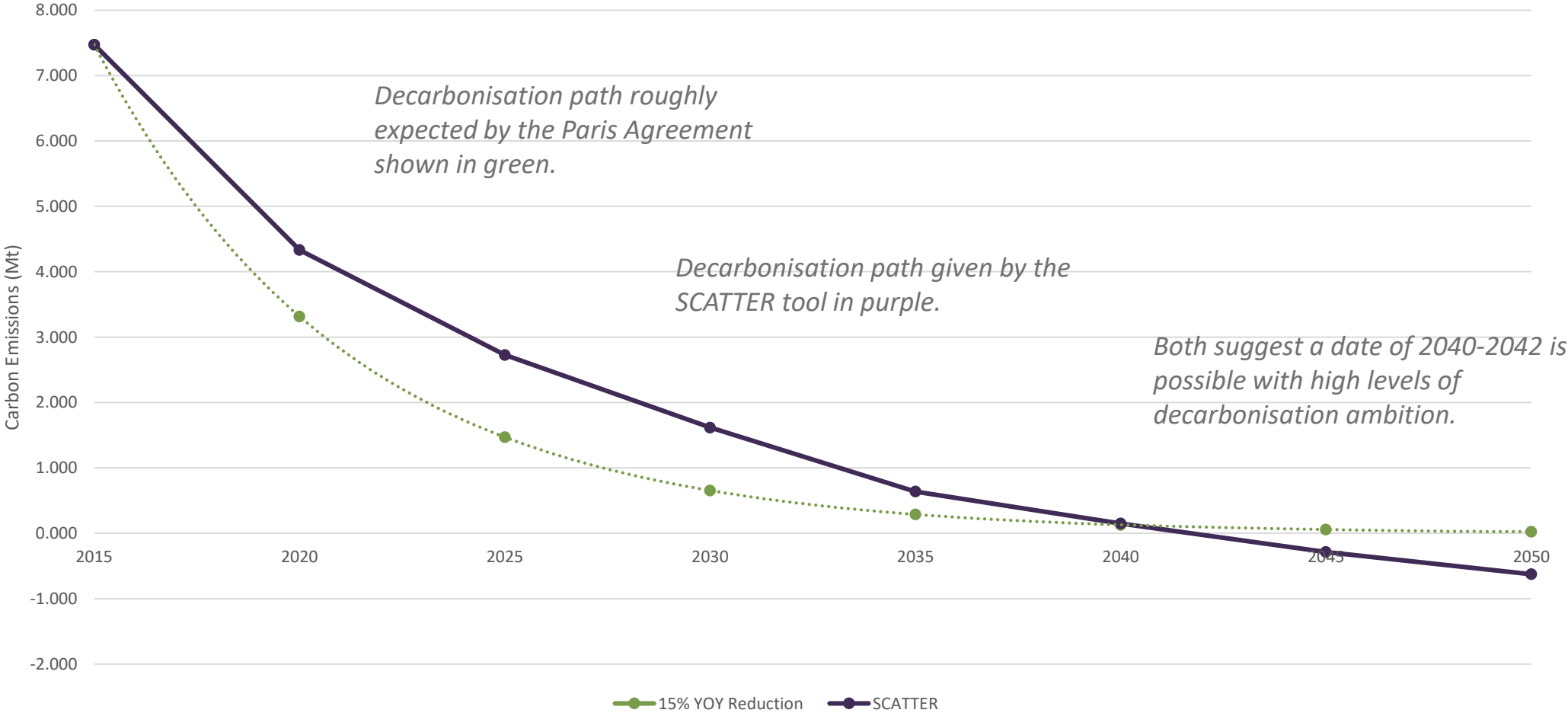


HYDROGEN FROM ELECTROLYSIS



NET-ZERO CARBON

NET-ZERO CARBON – PROPOSAL



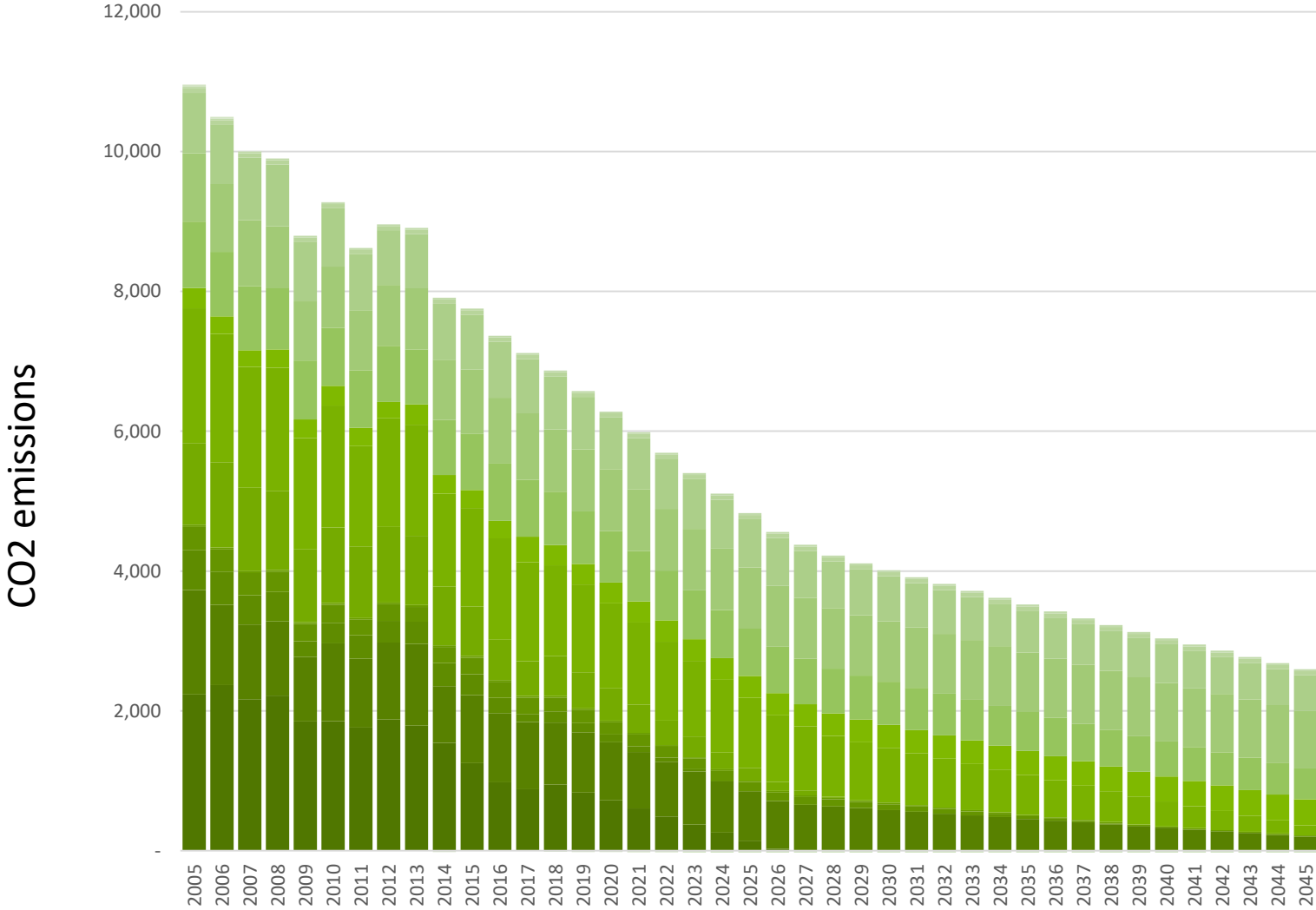
NET-ZERO CARBON – CARBON BUDGET & DATE

2040 - 2042

The **Carbon Budget** has been calculated to be 44.7 MtCO₂.

This is the equivalent of c7 years of emissions at 2017 levels – 13.2% annual emissions reduction to 2040.

NET-ZERO CARBON – 'MARKET' BENCHMARK



- Significant interventions and support will be needed to achieve net zero.

NET-ZERO CARBON – ACTIONS

1,500 jobs created in the low carbon and renewable energy sector by 2040.

All vehicles using our roads including public transport to be 100% zero emissions by 2035.

90% of existing homes and 80%+ of businesses with low carbon heating (or hydrogen-ready) by 2040.

Around 1GW of additional solar PV capacity by 2040.

Around 1GW of additional onshore wind capacity by 2040.

No fossil fuel heating in new homes from 2025 & aim for PassivHaus standard.

Energy efficiency improvements to at least 250,000-300,000 existing homes by 2040.

At least 5 minewater energy schemes operational by 2040.

THANK YOU

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16th January 2020

LEP and MCA Budget

Purpose of Report

This paper updates LEP Board members on the progress made in developing the draft LEP and MCA revenue budget for 2020/21 in the context of a 5-year financial strategy.

Thematic Priority

Cross cutting - governance

Freedom of Information and Schedule 12A of the Local Government Act 1972

The paper will be available under the SCR Publication Scheme.

Recommendations

LEP Board members are asked to consider and note the progress to date in developing the draft LEP and MCA revenue budget for 2020/21 in the context of a 5-year financial strategy.

1. Introduction

- 1.1 Members of the LEP Board have received a series of budget update reports at each of the past three meetings, starting with a paper in July 2019 setting out the need to prepare for a £2m budget reduction, followed by a further update in September outlining a plan which had been developed to achieve the first £1m of the £2m target, and finally in November confirmation that target had been revised to £1m because Mayoral Capacity Fund (MCF) had been extended for a further year in 2020/21.
- 1.2 This report is intended to bring members of the LEP Board up to speed on the balanced 5-year Financial Strategy that identifies the resources to deliver the ambitions for Sheffield City Region (SCR) identified by the emerging Strategic Economic Plan. The strategy was approved by the MCA on 18th November 2019.
- 1.3 Income fluctuation is the largest risk to the budget for MCA/LEP and specifically Enterprise Zone receipts. The initial challenge is to deal with £1m reduction in 2020/21 as a result of the changes to the LEP geography.
The table at paragraph 2.4 sets out the forecast profile of business rates income and the use of reserves over the next 5 years. Paragraph 2.3 sets out the main assumptions about the MCA/LEP's income streams, and the proposed use of reserves is covered in more detail at paragraph 2.6.

- 1.4** A budget review was instigated in June 2019, the result of which is that significant savings have been identified which would reduce the cost base sufficiently to match the funding envelope. For example, it is proposed to reduce the staffing establishment by 12% and to decrease spending on central revenue budgets by 9%. Work is ongoing to identify further savings.

2. Proposal and justification

- 2.1** Major changes to funding for the MCA will take place over the period of the 5-year strategy. For instance, up to £230m of Transforming Cities Fund (TCF) is likely to be made available for 2020 to 2024. The Local Growth Fund programme (LGF) finishes in March 2021 but will be replaced by Shared Prosperity Fund (SPF) that will support the delivery of the priorities within local SEPs. Whilst the level of that funding is not yet known, some assumptions around the structure to deliver on the SEP priorities have been made in developing the overall financial envelope. In the short-term following the impending Budget from the Chancellor, additional funding is likely to be made available to support Growth in the City Region.
- 2.2** The financial strategy, as set out in the table below, identifies a financial envelope for the next 5 years and a high-level breakdown of the areas of expenditure that will be incurred. The current year budget has been included for completeness. Slightly more detail about centralised budgets has been included for 2020/21 as these reflect the main thrust to develop actual programmes the coming year to deliver the SEP outcomes.
- 2.3** This section of the report identifies the main assumptions of the Strategy

2.3.1 Income

- Enterprise Zone Business Rate receipts fall in 2020/21 by £1m due to Chesterfield's withdrawal from SCR LEP. Business rate receipts have been increased in later years to reflect some current investment decisions being realised and have been adjusted downwards since last reported due to reprofiling of investment in some growth programmes next year.
- Additional income has been realised in the current year for the Advanced Manufacturing Park Technology Centre. This will continue across future years and has been built into the strategy.
- Treasury management receipts have been thoroughly reviewed. Additional income reflects additional funding from TCF and the level of balances that will be held by MCA over the next few years. Interest rates are assumed to remain constant.
- All LEPs receive capacity grant from BEIS of £500k. It is assumed that this will continue for the foreseeable future.

2.3.2 Staffing

- Following management review of the current establishment, the proposal is to reduce core staffing costs by £320k in net terms. The actual reduction is £600k (12% of the establishment) but some of this is met directly from specific funding sources. Management Team has undertaken reviews of all vacancies that have occurred in the year and deleted some posts in the emerging budget proposals.
- Further synergies will be achieved from integration of the Group. These are built into future staffing costs.
- New funding streams such as TCF and SPF will be coming to MCA over the period of the plan. It is assumed that these will meet any programme management costs and not fall to core funding.

- The numbers in this line represent the broad cost that is affordable to fund the structure of SCR. This undoubtedly will change over the period but the strategy identifies how much is available and proposed for approval.

2.3.3 Other Core Revenue Budgets

The emerging SEP requires revenue funding to develop the schemes and programmes to both achieve funding and deliver the desired outcomes. In the 2020/21 budget proposals for funding specific streams of work have been identified by Management Team to meet the immediate challenges. In future years will need revenue input to achieve delivery, but the focus may change. The LEP will consider these as part of the budget setting process in each year. Many of the other MCA/LEPs have identified the need to secure revenue funding to bring forward feasibility work and early scheme programmes as a budget requirement in their current financial planning period.

A budget review of the centralised budget line has been undertaken and identified a reduction of 9% in light of the budget challenge. Focussing this resource will place the MCA/LEP in the best place to draw down funding from new sources such as SPF when they become available.

- 2.4** The table below illustrates the financial plan that will deliver a balanced position after 3 years. In the short-term the MCA/LEP's forecast expenditure for 2020/21 (c.£6.2m) will exceed forecast income (c.£5.9m) by around £0.3m, and a contribution of £0.3m from reserves will be required in order to set a balanced budget. This will also be the case for 2021/22, when a further £0.24m will be required from balances before cost reductions and additional receipts are delivered to balance the budget.

| | Budget | Budget | Budget | Budget | Budget | Budget |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
| Income Stream | £'000 | £'000 | £'000 | £'000 | £'000 | £'000 |
| EZ Business Rates | £3,024 | £2,009 | £2,009 | £2,209 | £2,309 | £2,409 |
| Traded Income - AMP | £1,428 | £1,620 | £1,620 | £1,620 | £1,620 | £1,620 |
| Subscriptions | £1,204 | £1,184 | £1,184 | £1,184 | £1,184 | £1,184 |
| LEP Grants | £500 | £500 | £500 | £500 | £500 | £500 |
| Investment & Treasury Management | £195 | £400 | £450 | £450 | £450 | £450 |
| Investment Income - Property Portfolio | £155 | £155 | £155 | £155 | £155 | £155 |
| | £6,506 | £5,868 | £5,918 | £6,118 | £6,218 | £6,318 |
| Expenditure | | | | | | |
| Staffing - Core | £2,519 | £2,200 | £2,142 | £2,185 | £2,229 | £2,273 |
| Central Revenue Budgets | £1,761 | | £1,600 | £1,600 | £1,600 | £1,600 |
| Policy, Research & Evaluation | | £150 | | | | |
| LEP Support | | £100 | | | | |
| Business Investment Programme | | £200 | | | | |
| Trade & Investment | | £250 | | | | |
| Skills Programme Development | | £200 | | | | |
| Transport Programme Development | | £250 | | | | |
| Housing and Infrastructure | | £100 | | | | |
| Regional Placement | | £200 | | | | |
| Communications | | £150 | | | | |
| AMP | £1,022 | £1,022 | £1,022 | £1,022 | £1,022 | £1,022 |
| Business Support, Supplies & Services | £975 | £938 | £1,004 | £1,012 | £1,140 | £1,140 |
| Other Property Costs | £229 | £394 | £394 | £264 | £264 | £264 |
| | £6,506 | £6,154 | £6,162 | £6,083 | £6,255 | £6,299 |
| Use of (Contribution to) Reserves | -£0 | £286 | £244 | -£35 | £37 | -£19 |

2.5 Historically this budget has only shown the net call on core funding. Expenditure that is incurred managing revenue or capital programmes is attributed to those funds and not shown here. The 2020/21 emerging budget is being developed as the gross operating cost of running MCA/LEP and showing all sources of funding. Early indications are that the gross cost of operating MCA/LEP for 2020/21 is £9.9m with £3.8m funding from specific grant or charges to programmes.

2.6 Overall Strategy

The approved Financial Strategy sets the financial envelope and the broad budgets for delivering the necessary operations to deliver on the SCR ambitions. It identifies a shortfall on income in 2020/21 and 2021/22 of £530k before moving to a balanced position over the rest of the period as new income comes on stream. It is recommended that revenue reserves are used to smooth out this transition. The level of general reserve currently sits at c.£1.7m. Utilising £530k of this reserve is a sensible approach that does not jeopardise the future financial security of the MCA, and ensures that the general reserve does not fall below the recommended minimum of £1m.

At this stage, this is a broad indication of how reserves will be used as part of the financial strategy. The reserves strategy will be brought forward as part of the detailed budget report, along with the Section 73 Officer advice, in early 2020.

3. Consideration of alternative approaches

3.1 Do Nothing – this is not considered to be a viable option due to the statutory requirement to set a revenue budget in advance of the forthcoming year, and in accordance with the MCA's own financial regulations.

3.2 Invest further revenue funding to bring forward feasibility work and early scheme programmes. The additional investment would need to come from reserves.

4. Implications

4.1 Financial

The financial implications are clearly set out in Section 2 of this report.

4.2 Legal

There are no legal implications arising directly from this report.

4.3 Risk Management

In formulating the assumptions which underpin the proposed financial strategy, officers have taken a prudent approach in order to mitigate all known risks.

The MCA/LEP continues to depend heavily on retained business rates from enterprise zones to resource the core budget. This source of income is susceptible to a variety of risks. This issue has been discussed previously with Members as part of the 2019/20 budget-setting process. However, the most significant element of this risk has now crystallised, namely the loss of £1m due to changes to SCR boundaries.

In light of these significant financial risks, sensitivity analysis has been undertaken to assess the MCA's exposure and to ensure that the MCA has a robust reserves strategy. The level of reserves remains sufficient to mitigate these risks, and as stated above the reserves strategy will be included as part of the 2020/21 budget report in early 2020.

4.4 Equality, Diversity and Social Inclusion

The principles of equality, diversity and social inclusion are built into the annual budget setting process and are taken into consideration when assessing budget pressures and savings proposals. Any Equality implications that members must have due regard to under s.149 Equality Act 2010 will be set out in detail in the report that accompanies any recommendation about specific proposals.

5. Communications

5.1 Consultation with key stakeholders has started and will continue through the various stages of the 2020/21 business planning process, including the Mayor & MCA Leaders, LEP Board, Chief Executives and Directors of Economic Development and Finance.

The 5-year financial strategy has also been discussed with the LEP Vice Chair and the Co-Chair of the Business Growth Executive Board, both of whom were selected by the LEP Chair to represent the private sector members of the LEP Board.

6. Appendices/Annexes

6.1 None.

| | |
|----------------------|--|
| REPORT AUTHOR | Noel O'Neill |
| POST | Interim Group Chief Financial Officer |
| Officer responsible | Noel O'Neill |
| Organisation | Sheffield City Region Mayoral Combined Authority |
| Email | noel.oneill@sheffieldcityregion.org.uk |
| Telephone | 0114 22 11 3454 |

Background papers used in the preparation of this report are available for inspection at: 11 Broad Street West, Sheffield S1 2BQ

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January 2020

Mayor's Update

Purpose of Report

To provide LEP Board Members with an update on key Mayoral activity relating to the economic agenda.

1. Flooding

The floods in early November had a devastating impact across South Yorkshire and particularly in Doncaster. With more than 1,000 homes flooded or unliveable and a further 350 businesses directly and indirectly affected, it will take many months to recover and my thoughts remain with those affected.

Since these events took place, I have been working with Government to secure additional resources to support those affected. I welcome the recent commitment from the Secretary of State to provide up to £1m of match funding for the South Yorkshire Community Foundation appeal, which has already raised more than half a million pounds.

I am continuing to work with the local authorities to develop a summary of the region's flood defence needs, to ensure that the region is more resilient to the increased levels of rainfall experienced as part of our changing climate. This will then be presented to Government to secure the vital investment needed to provide the much-needed protection for our communities and businesses.

2. Climate Emergency

At the November meeting the Mayoral Combined Authority (MCA) agreed to declare a climate emergency in the region. Addressing this issue is the biggest challenge facing the world but is one where everybody needs to play their part to help secure our planet's future.

The MCA is now developing a plan to ensure that we deliver our part, working with our region's two Universities. However, given the important role of the LEP in the region I would welcome the Board's support in taking this forward. I believe that we have a unique set of capabilities within the region that mean we can lead the way on the climate change agenda.

3. Bus Review

I am in regular contact with Clive Betts MP to discuss progress on the independent review of bus services which I appointed Clive to lead. The review has been continuing apace. Extensive stakeholder engagement, including hearings and workshops with user groups and operators, has been supplemented by a survey of users (and non-users) which has had over 7,000 responses. The findings are being analysed for insights into the customer experience and expectations of bus services in South Yorkshire.

Clive and the commissioners are now in the process of drafting their report which will be submitted to me in March and shared with the LEP board shortly after. The report will articulate a wide range of findings, conclusions and recommendations for substantial change. Emerging systemic issues

include: the collective leadership of buses across our region, accountability and the major challenge of funding. The latter is something which I am keen to engage central government on but also includes assessment of the new powers given to me in the Bus Services Act 2017 – including franchising which will be the highest profile issue the review addresses. I am confident that the recommendations will be ambitious and will put customers back at the heart of regional bus service delivery.

4. Culture Strategy

South Yorkshire has a growing range of cultural assets that make a significant contribution to the region's economy. This sector continues to have the potential to grow further, making a greater contribution to the region's economy, sustainable jobs, urban centre regeneration and social cohesion.

Whilst there are significant strengths and opportunities in the region the broad story of the Sheffield City Region visitor economy, arts and culture offer is that participation and engagement rates of our communities are too low, that the region is undercapitalised in terms of investment from bodies such as the Arts Council, there are too few projects of scale, there is a need for greater collaboration and the offer is not promoted effectively.

Given both the opportunities and challenges facing the sector throughout 2020 I will be working to grow the region's cultural, arts and heritage assets, building on the existing successes that have already been achieved.

5. The value of music in the region's economy

In December UK Music published an independent report into the music sector across South Yorkshire. The aim of the report was to understand the music industry as it is now and identify areas in which the region can drive forward change and grow the music sector.

The report concludes that music tourism adds more than £92 million to the Sheffield City Region economy each year. It also set out five recommendations to continue to grow the contribution of the sector to the economy, including by attracting investment and creating jobs. These are:

- **Opportunities for emerging talent** – ensuring that all young people, regardless of their background, should have access to music in education and should be able to pursue a career in music.
- **Protecting grassroots music venues** – offering business rate relief and help with licencing to venues as well as improving accessibility at venues for deaf and disabled audiences and performers.
- **Developing music businesses** – leverage powers to support the growth of the music businesses which in turn will increase employment and productivity.
- **Integrating Transport** – creating a transport system that is fit for purpose and that supports the night time economy.
- **Reaching out to every corner of the region** – Mapping all music activity across the region recognising that different parts of the region have different needs and challenges.

The SCR Music Board will now consider how these should be taken forward through its work. I would like to put on record my thanks to Laura Bennett for all of her hard work and dedication in chairing the Board.

January 2020

Chief Executive's Update

Purpose of Report

To provide LEP Board Members with a general update on activity being undertaken by the LEP outside of the agenda items under discussion.

1. LEP Annual General Meeting

The next meeting of the LEP Board in March will be its Annual General Meeting. A report on the work of the LEP over the last 12 months will be considered. In accordance with the requirements on all Local Enterprise Partnerships the meeting will take place in public.

2. MIPIM Cannes

The Sheffield City Region will take a delegation to the annual MIPIM Cannes property and investment conference in March. We are working directly with the Department for International Trade, Government agencies such as Homes England, the NP11 and the Northern Powerhouse Partnership as well as all MIPIM leads from across the North on a more coordinated and coherent Northern Powerhouse presence.

3. New Government engagement and March 11th Budget Submission

The Chancellor of the Exchequer has indicated the Government's intention to deliver a Budget on March 11th. It is expected that this Budget will include opportunities for the North of England in terms of the Government's 'levelling up' agenda; including changes to the Treasury Green Book methodology.

We will be working with Departments as well as making a formal submission to the Treasury over the coming weeks with our input centred around the priorities emerging in our new Strategic Economic Plan and the pipeline of schemes already in development.

It is likely that there will also be a wider Northern response to the Budget, driven by the outputs of the Manifesto of the North produced prior to the General Election. Individual local councils, as well as the SCR will be engaged in that process.

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