YORKSHIRE DALES NATIONAL PARK AUTHORITY	**ITEM 6**
Date:	**20 September 2022**
Report:	**YORK AND NORTH YORKSHIRE'S 'ROUTEMAP TO CARBON NEGATIVE'**

Purpose of the report

1. To provide an update on the development of York and North Yorkshire's 'Routemap to Carbon Negative', and seek approval for the Authority to adopt it.

RECOMMENDATION

2. It is recommended that the Authority:
    a. notes the progress on the development of York and North Yorkshire's Routemap to Carbon Negative, and the key actions to which the Authority can contribute directly; and,
    b. adopts the Routemap.

Strategic Planning Framework

3. The information and recommendation contained in this report are consistent with the Authority's statutory purposes and its approved strategic planning framework, and in particular:

    - **National Park Management Plan 2019-2024**
      "By 2040 the Yorkshire Dales National Park will be resilient and responsive to the impacts of climate change, storing more carbon each year than it produces."

Background

4. The York and North Yorkshire sub-region has the potential to sit at the heart of the UK's decarbonisation plans and simultaneously create significant economic opportunities. We can build on the region's existing industry strengths, like BioYorkshire, alongside our outstanding natural capital assets – like the National Park - which can sequester carbon and underpin the aim for York and North Yorkshire to become England's first carbon negative region.

5. Over the past two years, the York and North Yorkshire Local Enterprise Partnership (Y&NY LEP) has been leading the development of a Routemap to Carbon Negative. This routemap will provide a clear, co-owned plan to achieve net zero by 2034 and carbon negative by 2040. This focus on transformative decarbonisation has also been at the heart of the c£750 million, 30-year

Devolution Deal for York and North Yorkshire that was announced by Government on 1 August.

6. The specific objectives of the Routemap are to:
    a. provide strategic direction and a coordinated approach to decarbonisation;
    b. catalyse collaborative action - at pace and scale;
    c. build confidence that reaching net zero (and beyond) to carbon negative is feasible;
    d. harness the economic opportunities of net zero, leveraging public and private sector investment; and
    e. position York and North Yorkshire at the forefront of national climate action and provide a platform to influence Government policy and funding.

7. To ensure an evidence-based approach, a number of studies have informed the development of the Routemap. This includes initial research undertaken by the Tyndall Centre to establish a carbon budget for the region that ensures it will make a 'fair' contribution towards the delivery of the Paris Climate Change Agreement.

8. To understand "how" the sub-region can get to net zero and stay within this carbon budget, the Y&NY LEP commissioned a study to develop potential pathways to decarbonise high-emitting sectors – transport, buildings, industry, power, and land use and agriculture. This study provided the scale of ambition required to reach net zero by 2034; from the number of trees that need to be planted to the number of heat pumps that need to be installed. Over the last two years, the Y&NY LEP led an extensive stakeholder engagement process, including an open consultation and workshop sessions, to challenge, refine and validate the scale of these ambitious targets.

9. Over the last 12 months, the Y&NY LEP team has been working with a range of partners – including the two national park authorities - to develop the strategic priorities and action plans to deliver this scale of ambition. This included an open consultation to hear a range of stakeholder voices, and follow-up stakeholder workshops on specific topics, including one on natural capital (the theme most relevant to our statutory purposes).

York and North Yorkshire's Routemap to Carbon Negative

10. In July, the Y&NY LEP Board approved the final draft of the Routemap (see www.ynylep.com/routemap). The strategic framework for the plan – which received strong support from stakeholders across the region – is set out in the Executive Summary (**Annex A**). It summarises the priorities for each sector, and the key 'enablers' to create a carbon negative economy.

11. The Routemap acknowledges that transformative change is needed – right across North Yorkshire and its high-emitting sectors. That includes: doubling the amount of woodland in the sub-region; halving private car use; and 'retrofitting' 250,000 homes. The Routemap sets out a long term direction of travel and key

strategic priorities to deliver these changes. The main elements of which are set out in **Annex B**.

12. The Routemap also contains a series of high-level action plans, which include clear timeframes for implementation, as well as clear ownership of each action. Since the final draft was approved in July, the Y&NY LEP has been working with City of York Council, the new North Yorkshire Council, district councils and national park authorities to sort out appropriate sign-off and adoption processes. This includes agreeing the final details of some parts of the high-level action plans. The Authority has held positive discussions with the LEP officers on this matter. The key areas where it is now expected that the Authority would play a significant role are:

    a. Local planning policy – setting a framework through the Local Plan that encourages 'low carbon' development;

    b. Awareness raising;

    c. Supporting the development of a region-wide approach to 'retrofitting' energy efficiency measures into traditional buildings;

    d. Supporting the development of a 'Natural Capital Investment Plan' for York and North Yorkshire;

    e. Supporting a co-ordinated approach to 'Active Travel' and access to outdoor recreation;

    f. Delivering the *Farming in Protected Landscapes* programme;

    g. Helping upland farmers make the transition towards more profitable, low carbon farming (through e.g. carbon audits and tailored business advice)

    h. Supporting upland peat restoration through the Yorkshire Peat Partnership;

    i. Delivering landscape-scale nature recovery programmes, like *Tees-Swale: Naturally Connected*;

    j. Influencing the delivery of the new national Environmental Land Management schemes

    k. Facilitating the creation of new native and mixed woodland, through *Grow Back Greener*, the White Rose Forest and other local partnerships.

Next steps

13. The final Routemap will be formally launched at the Y&NY LEP's Business Summit in October 2022.

14. To ensure effective implementation, the Y&NY LEP team and partners will develop detailed implementation plans, including key milestones, success criteria and risk registers. Implementation will be overseen by the Y&NY LEP Board, until new structures are established through the proposed Mayoral Combined Authority.

Conclusion

15. It is now well understood and accepted that we are facing a global crisis of climate change and ecological collapse. The York and North Yorkshire LEP, working with local authorities and other organisations and businesses across the region, has recognised both the scale of the issue, and the potential for York and North Yorkshire to sit at the heart of the UK's decarbonisation plans, creating significant local economic opportunities. The routemap is a significant first step towards becoming England's first carbon negative region.

Gary Smith
Director of Conservation and Community

5 September 2022

Executive Summary

Why?

As storms, floods and wildfires intensify across the world, there is growing urgency for collective action to tackle climate change. The 2021 IPCC report is a code red for humanity; we are already at 1.2°C warming and are at imminent risk of reaching the internationally agreed threshold of 1.5 °C. In York and North Yorkshire, we have a critical contribution to make to national and global efforts; we have the potential to go beyond net zero, and become England's first carbon negative region. With two national parks, three Areas of Outstanding Natural Beauty (AONBs), over 70% of our geography being used for agriculture and unique marine and coastal assets, we are uniquely positioned to use our natural assets to capture and store carbon. As a leader in decarbonisation and world class innovation assets, we can harness the economic opportunities of the transition, creating jobs and attracting investment to the region. This Routemap provides an ambitious pathway for local authorities, businesses, charities, academia and communities to come together to deliver carbon reduction at the necessary pace and scale to reach net zero by 2034, and net negative by 2040.

What?

The series of targets and actions set out in this Routemap have been informed by comprehensive stakeholder engagement and a growing evidence base, including York and North Yorkshire's Carbon Abatement Pathways study. Our approach is based on the strategic pillars of decarbonising our energy system, moving towards a circular economy and enhancing our natural capital. This ensures that we are taking a holistic approach and delivering benefits beyond carbon reduction to create a greener, fairer, stronger economy.

Within our places and across key sectors - Power, Heat & Buildings, Transport, Industry & Business, Land Use, Agriculture and Marine– transformative change is needed. Through our research, we understand the scale of ambition required - from doubling the current size of woodland in the region, to halving private car use, to retrofitting 250,000 homes. The Routemap sets out key strategic priorities to deliver these changes.

How?

We need to create the conditions to enable the movement towards a carbon negative York and North Yorkshire. Through our research and stakeholder engagement, we have identified a number of enablers – including: Research, Strategy & Planning; Communication, Engagement & Movement Building; Collaboration & Innovation; Developing Skills; Programmes & Demonstrator Projects; Infrastructure, Green Industries & Supply Chains; Securing Investment; and Influencing Government Policy.

Who?

The Routemap has been developed collaboratively, and must be delivered collaboratively. Every local authority, business, organisation, charity and community has a role to play. Every individual can make a difference. The Action Plans in the Routemap identify organisations who have a clear leadership role in delivery.

Where?

In the process of implementing the Routemap, we will need to understand 'where' projects and activities need to be delivered. Some of these decisions will be made at an organisational level, and others will require a more strategic approach across the region, such as ensuring the right tree is planted in the right place, or identifying the most viable locations for heat networks. A number of forthcoming strategic, spatial plans will fill this remaining gap – including the underway Local Area Energy Plans (LAEP) and forthcoming Local Nature Recovery Strategy and Natural Capital Investment Plan.

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Routemap Purpose

The overarching aim of the Routemap is to provide a clear, co-owned plan to accelerate the transformation to a carbon negative York and North Yorkshire.

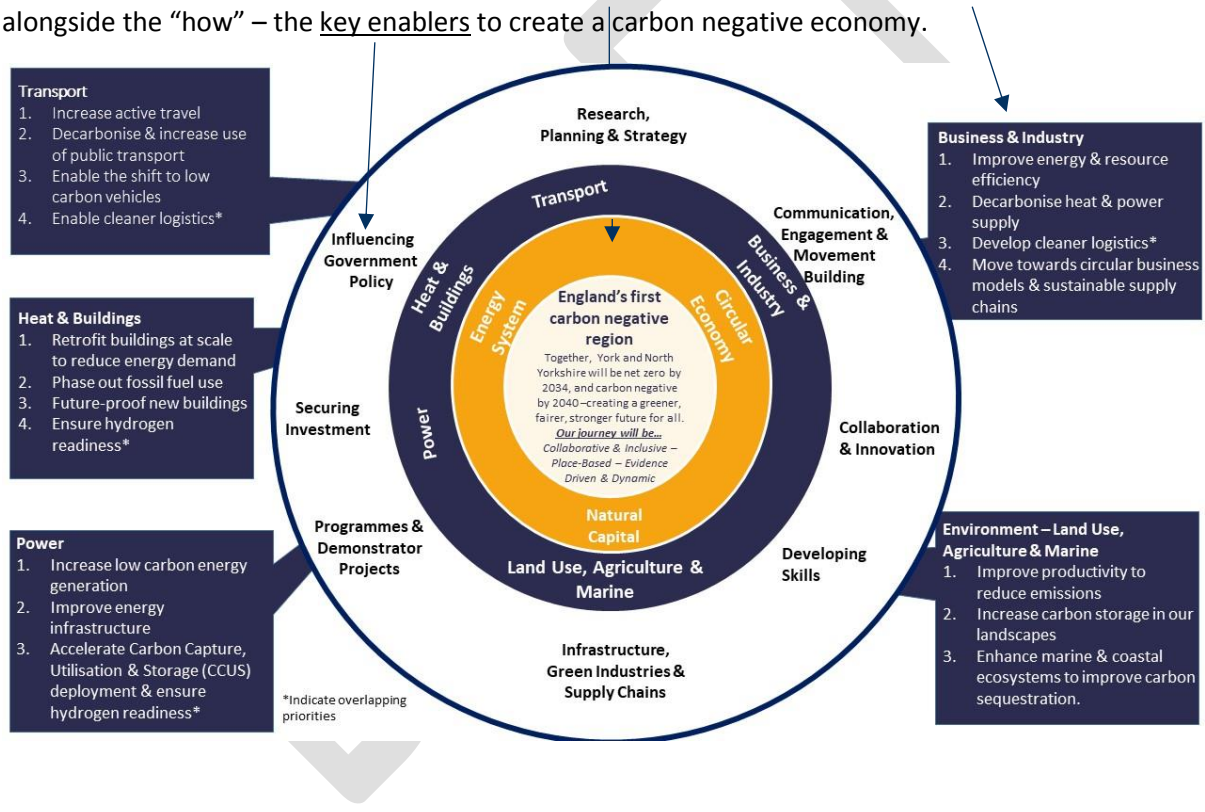
The specific objectives of the Routemap are:

- To provide strategic direction and a coordinated approach to decarbonisation;
- To catalyse collaborative action at pace and scale;
- To build confidence that reaching net zero and beyond to carbon negative is feasible;
- To harness the economic opportunities of net zero, leveraging public and private sector investment; and
- To position York and North Yorkshire at the forefront of national climate action and provide a platform to influence Government policy and funding.

Our Strategic Framework

Building on an extensive evidence base and working closely with stakeholders, our framework sets out our approach to delivering England's first carbon negative region.

The framework summarises the "what" – our strategic pillars and priorities for each sector, alongside the "how" – the key enablers to create a carbon negative economy.



What's in the Routemap?

The Routemap sets out a long term direction of travel, but focuses on priorities and actions between 2022 and 2027. This is because we are still awaiting key decisions at a national level which will impact our pathway to net zero in the late 2020s and beyond.

The document includes the following sections:

- Why Carbon Negative? The Case for Action
- Our Journey to Carbon Negative
- Enabling Transformation across the Economy: Creating Systems Change
- Reducing Emissions across the Economy: Sector Action Plans
- Governance, Performance Monitoring & Reporting

Summary of ambition targets for high-emitting sectors

Power

- **Upgrade the electricity infrastructure** to enable over double the existing demand by 2038 (up to 102% higher annual demand)
- Install an additional 1,500 megawatt (MW) of **capacity from solar, onshore wind and hydropower** by 2030 and over 2,500 MW by 2038
- Deploy a **300 MW first-of-a-kind hydrogen (H_2) turbine** online by 2030, with 300 MW subsequent increase every 3 years
- **Reduce peak demand** by 10% by 2038
- **Increase installed anaerobic digestion** (AD) generation capacity by 14MW by 2030 and 16MW by 2038
- **Increase installed small bioenergy generation** capacity by 42MW by 2030 and 60MW by 2038*
- **Deploy battery storage** to a scale of 441 MW capacity by 2030 and 736 MW capacity by 2038
- **Install Carbon Capture and Storage** (CCS) to large biomass and fossil plants, with 2 biomass turbines fitted with CCS technology at Drax by 2034, capturing 8 $MtCO_2$/yr by 2030 (only 20% of which is attributed to region)
- **Deploy CCS retrofits onto Energy from Waste** (EfW) generation by 2030

Heat & Buildings

- **Retrofit homes** to at least an EPC C rating - 180,000 by 2030 and 250,000 by 2038
- **Retrofit public buildings** to at least an EPC C rating or above by 2027
- **Large-scale deployment of heat pumps** – 130,000-200,000 will be required by 2030, and 200,000-270,000 by 2038
- **Deploy district heating** to 10% of buildings by 2030 and over 18% of buildings by 2038
- **Install H_2 boilers** in between 13%-40% buildings by 2038 (dependant on gas grid deployment)
- **Eliminate oil boiler use** by 2030
- **Deploy rooftop solar PV** on 70,000 homes by 2030 and 101,00 by 2038
- **Deploy biobased construction materials** in 2,000 new homes by 2030, and 14,000 new homes by 2038

Transport

- **Reduce private car usage** by 48% by 2030
- **Increase active travel for short journeys**, ensuring walking and cycling accounts for 17% of distance travelled by 2038:
    - Increase of 40% in walking kms travelled by 2030
    - Increase of 900% in cycling kms travelled by 2030
- **Increase of passenger modal share by bus** to 8% of all journeys and by train to 16% by 2030:
    - Increase in bus passengers km by 49% in 2030 and 56% by 2038
    - Roll-out of battery electric buses, ensuring they account for 25% of the fleet by 2030 and 95% by 2038.
    - Roll-out of battery electric vehicles, ensuring they account for 33% vehicles on the road by 2030 and 76% by 2038 (vehicle sales to be in the order 20,000 per year by 2038)

- Van activity decreasing by 10% with share of vehicle stock being 16% battery electric vehicles by 2030 and 55% by 2038
- HGV activity decreasing by 19% with share of vehicle stock Diesel ICE decreasing from 74% in 2030 to 10% in 2038.
- 10% of freight is shifted from heavy goods vehicles to rail
- 2% of van traffic is replaced by cycle freight
- Sales of zero emissions heavy goods vehicles increasing from around 250 per year in 2030 to close to 700 per year by 2038

Industry & Business

- **Retrofit over 62% of existing business premises** by 2038
- **Increase installation of rooftop solar** on business premises, approximately 48 Gwh each year up to 2038
- **Increase energy efficiency** of businesses to reduce energy demand by 25% by 2030
- **Increase electrification of industry**, particularly for low temperature heat and heat on smaller sites*
- **Increase fuel switching to bioenergy**, so that bioenergy accounts for 10% of industry fuel use by 2030 and 11% by 2038
- **Increase material efficiency and circularity** of business processes and products, resulting in a 15-40% reduction in energy consumption by 2038
- **Shift short journeys of light freight to cycle** and **double the proportion of freight carried by rail** by 2030 (from 10% to 20%)
- **Deploy district heating** to cover between 12-22% of non-domestic heat by 2038
- **Deploy hydrogen boilers** to supply approximately 11% of non-domestic heat by 2038

Environment – Land Use, Agriculture & Marine

- Plant **37,000 hectares of new woodland** by 2038
- Increase amount of **hedgerows in the region by 20%** by 2038, alongside improvements in hedgerow width and health
- 100% of upland and lowland **peatlands under restoration** by 2038
- **Improve manure management**
- Decarbonisation of **on-farm machinery**
- Increase **bioenergy crops to reach over 5,000 hectares** by 2038
- Achieve **30% reduction in food waste** by 2030