Report to:	Transport Committee
Date:	13 March 2020
Subject:	**Zero Emissions Transport Update**
Director:	Alan Reiss, Director, Policy, Strategy and Communications
Author(s):	Head of Transport Strategy Implementation

Is this a key decision?	☐ Yes ☒ No
Is the decision eligible for call-in by Scrutiny?	☐ Yes ☒ No
Does the report contain confidential or exempt information or appendices?	☐ Yes ☒ No
If relevant, state paragraph number of Schedule 12A, Local Government Act 1972, Part 1:	

1. Purpose of this report

1.1. To provide an update on the activities of the West Yorkshire Combined Authority's work to decarbonise transport and contribute to tackling the climate emergency, including:

- Details of the Combined Authority's initial engagement on the decarbonisation work to-date and how this is shaping our approach, and proposals for further, widened engagement to develop and gain support for the approach to decarbonising transport;
- Update on the North and West Yorkshire Emission Reduction Pathways study, focussing on emerging findings from work in progress; and
- Update from meetings of the Combined Authority's Zero Emissions Transport Working Group, which is overseeing the technical work of the North and West Yorkshire Emission Reduction Pathways study.

2. Background

2.1. The West Yorkshire Combined Authority, with its partner councils, is taking a lead role in tackling climate change and has prioritised action to decarbonise the economy.

2.2. The Combined Authority declared a climate emergency in July 2019 and strengthened the Leeds City Region target for emission reductions to net-zero carbon by 2038, with significant progress expected by 2030. The task is challenging and will require significant and swift action to decarbonise all sectors, including transport.

2.3. The Transport Committee has established a Zero Emission Transport Working Group to oversee the technical work to establish the potential contribution of the transport sector to the regional emissions reduction target. The Working Group met for the first time on 30 September 2019. The terms of reference and initial activities of the Working Group were described in a report to the 10 January 2020 meeting of Transport Committee. A key focus of the Working Group is overseeing the North and West Yorkshire Emission Reduction Pathways study

2.4. **Appendix 1** provides background information on the climate emergency and current related activity.

2.5. Transport Committee agreed to receive regular updates on progress with decarbonisation work streams.

Engagement activities

2.6. The Combined Authority recognises that it is essential that stakeholders are actively involved in the decarbonisation work and their input sought, listened to and acted on.

2.7. An engagement plan has been drawn up to ensure a comprehensive range of stakeholders can input into the decarbonisation work as it develops. The current focus for engagement is the North and West Yorkshire Emission Reduction Pathways study which is explained in more detail in paragraphs 2.14 to 2.27.

2.8. **Appendix 2** provides a summary of the engagement plan and the organisations that have, or will be, consulted with. Please note this is not an exhaustive list and is being added to all the time.

2.9. Future key engagement milestones with stakeholders and interested parties will include sharing the results of the emission reduction pathways and providing opportunities for the co-design of policy recommendations and action plan. Engagement activities include:

- **March 2020**: 1:1s with partner councils including Members and senior officers.

- **April 2020**: Sector specific stakeholder workshops (inviting participation from the business community, civil society and interest groups) to be held 22 / 23 April 2020. The transport sector workshop will be held on 23 April at the Royal Armouries Museum, Leeds.

- **June / July 2020**: Public consultation on the policy recommendations and action plan.

2.10. Early engagement involved the Combined Authority seeking the views of a range of sector experts and known interest groups to inform the approach to modelling emissions reduction pathways. This engagement has identified some key themes, which have informed the development of future scenarios and the technical assumptions used for modelling emissions under these different scenarios.

2.11. **Appendix 3** provides an overview of early stakeholder inputs and how they have been addressed within the study. Stakeholder comments were taken on board in respect of:

- **Aviation**: the need to calculate emissions of both international and domestic aviation from Leeds Bradford Airport. This was previously outside of scope of the commission but has now been calculated and included in the work.

- **Civil society engagement**: a need to engage with a wider cross section of civil society to ensure a wide range of views and perspectives were included. Some civil society organisations have already been engaged with and the Combined Authority is actively seeking guidance from local authority partners on other groups that should be engaged with.

- **Assumptions**: a need to ensure these are communicated to stakeholders when undertaking engagement. This assists with transparency. All assumptions that have been used in the modelling of the pathways is to be made available when engaging with stakeholders.

- **Air quality alignment**: a need to ensure greater alignment with work on air quality to ensure economies of scale and avoid conflicting objectives. There is a commitment to provide regular updates at air quality officers meetings and for a member of the group to attend steering group meetings for this commission.

2.12. As outputs of the tasks outlined in 2.18 become available the level of engagement with stakeholders and interest groups will increase significantly. This will include engagement at a national (e.g. government departments) and sub-national (e.g. Transport for the North) levels as well as at the local level including West Yorkshire local authorities, organisations (e.g. Northern PowerGrid), civil society and the public.

2.13. The detail of engagement on preferred pathways for decarbonising transport and other sectors will be determined from spring 2020 onwards, culminating in the presentation in autumn 2020, of options for a preferred pathway for endorsement by Transport Committee, prior to proceeding to the Combined Authority and LEP for approval.

2.14. The Equalities Impact Assessment, as set out in paragraph 2.39, will be developed as part of the engagement approach adopted for this commission.

North and West Yorkshire Emission Reduction Pathways study

2.15. The North and West Yorkshire Emission Reduction Pathways (ERP) study is the current focus of our work on decarbonisation.

2.16. The purpose of this study is to assist local authorities, the Combined Authority, Leeds City Region LEP and York, North Yorkshire and East Riding (YNYER) LEP to understand the ways in which they could address the climate emergency and achieve their respective emission reduction targets.

2.17. The study looks to influence the future direction of the region in respect of providing evidence and proposals that inform decisions on carbon reduction, including those taken by Committees of the Combined Authority.

2.18. The study focusses on five sectors: Industry, Power, Buildings, Land use and Transport, and consists of three main tasks:

- **Task 1**: Develop emission reduction pathways that demonstrate how each area can deliver / comply with its emission reduction target and carbon budget.
- **Task 2**: Produce an implementation route-map based on the emission reduction pathways.
- **Task 3**: Produce policy recommendations and an action plan that delivers the activity identified in Tasks 1 and 2.

2.19. The table below provides an overview of what is in and out of scope for the study in relation to transport. This has been informed by the initial input of stakeholders

In scope	Out of scope
• Emissions from road kilometres travelled in the region • Emissions from rail • Emissions from domestic and international aviation • Electricity used in the region for electric vehicles • Energy and emissions for producing hydrogen for hydrogen fuel-cell vehicles	• Embedded emissions in products / services imported e.g. components used in the manufacture of electric cars • Non-greenhouse gas emissions from transport

2.20. Work on the study is underway and currently at Task 1. For Task 1, four overarching pathways have been agreed to achieve the Leeds City Region emission reduction target: Theses are Business as Usual, Max Ambition 2030, High Hydrogen 2038, and Balanced 2038.

2.21. The pathways have been developed to represent what are considered possible plausible futures for the region considering current up to date research and expert opinion.

2.22. A Business as Usual (BAU) pathway has been developed to demonstrate what emissions are likely to be if nothing other than current policies are in place. This in turn allows the outputs of BAU to be compared against the other three pathways that are aiming to meet regional emission reduction targets.

2.23. The Max Ambition 2030, High Hydrogen 2038, and Balanced 2038 pathways represent different ways in which the respective regional targets of North and West Yorkshire could be met. They acknowledge that there are many ways in which the targets could be met and provide flexibility in the approach that can be adopted.

2.24. Both 2038 pathways are framed against the regional target for the Leeds City Region. The 2030 pathway is also included to reflect the more challenging targets of some local authorities in North and West Yorkshire.

2.25. From a transport perspective the following applies in each pathway:

A. **Business as Usual**: Internal combustion engine vehicles remain dominant with low (consumer choice-driven) uptake of low emission powertrains. Demand growth across sectors.

B. **Max Ambition 2030**: Main technologies are plug-in electric powertrains and biomethane HGVs. Maximum demand reduction and modal shift.

C. **High Hydrogen 2038**: Plug-in electric still important in lighter segments but high deployment of hydrogen fuel-cell technology across segments. High demand reduction and modal shift.

D. **Balanced 2038**: Balanced deployment of plug-in electric and hydrogen fuel-cell powertrains, with hydrogen focus in heavier segments. High demand reduction and modal shift.

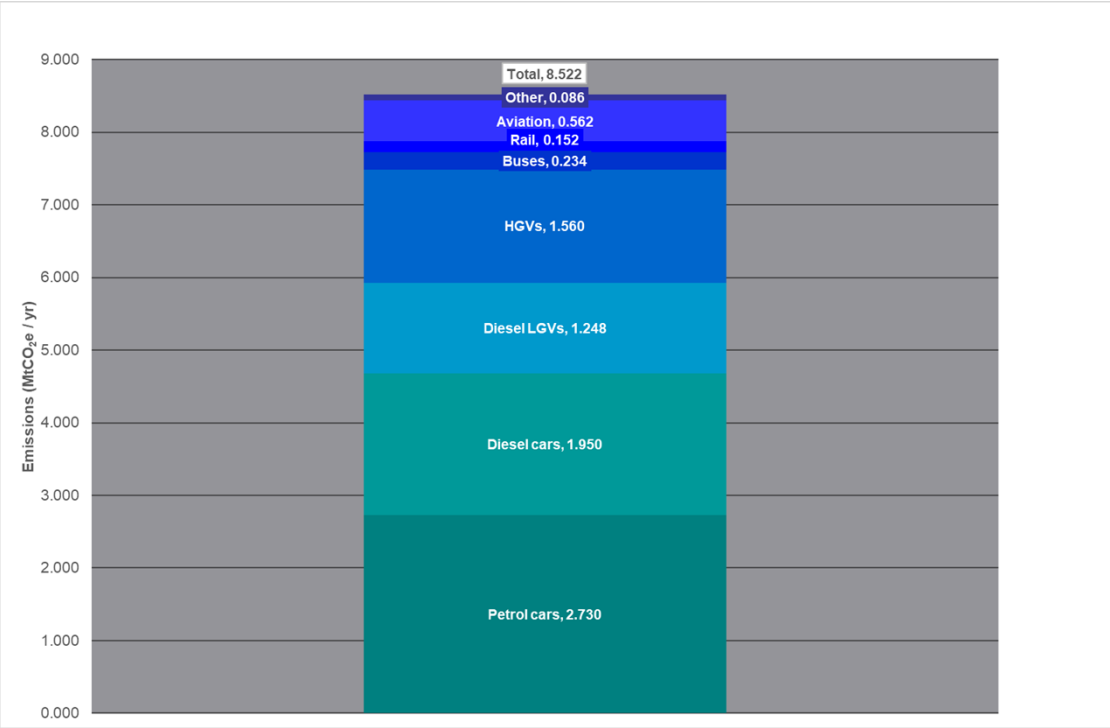
2.26. A series of assumptions were identified for each sector to develop the pathways and these have been tested with sectoral experts and stakeholders. **Appendix 1** provides more detail on the assumptions used and **Appendix 3** shows the comments of stakeholders in influencing the approach

2.27. The graphs and data that follow relate to the combined North and West Yorkshire study geography and represent initial findings from work in progress.

Data will be subsequently made available at a disaggregated North and West Yorkshire (and Leeds City Region) geography, for mid-March.

2.28. Based on the latest available data (2017) total emissions were 24.6 $MtCO_2$ for the region. The contributions of each sector were heavy industry 1.4 $MtCO_2$ (5.7 percent), land-use and agriculture 5.7 $MtCO_2$ (24 percent), buildings 8.7 $MtCO_2$ (35.4 percent), and transport 8.6 $MtCO_2$ (35 percent).

2.29. The figure below illustrates the current situation relating to transport emissions across North and West Yorkshire. The transport sector is the second largest emitting sector across North and West Yorkshire after the buildings sector, with total transport emissions of 8.522Mt CO_2 per annum. Transport sector emissions are dominated by emissions from road transport, which are in turn dominated by emissions from cars, vans and lorries totalling 7.488Mt CO_2. Aviation emissions (combining domestic and international flights) currently total 0.562Mt CO_2.



Emerging findings

2.30. Initial results from the transport pathways modelling have now been completed. These results represent potential ways in which the regional targets could be achieved and are high-level at this stage.

2.31. All the measures identified, and the scale of their deployment, will need to be the subject of much more detailed project development post completion of this commission. The when and how this subsequent work occurs will in part be defined by the implementation roadmap and policy recommendations that are developed in later stages of the commission.

2.32. Initial results suggest that:

- The transport sector will not be able to reduce emissions to zero without emissions from the generation of electricity also being reduced to zero.

- With a complete reduction of emissions to zero by the power sector only the Max Ambition 2030 pathway could result in zero transport emissions on or before 2038 (but not by 2030). The High Hydrogen 2038 pathway could achieve a 93 percent reduction and the Balanced 2038 pathway could achieve a 98 percent reduction, all by 2038.

- Where emissions remain under any of the pathways, these would need to be offset from emission savings in other sectors.

- Private cars are likely to still form a large proportion of the transport fleet in future years, but the fleet make-up would need to change from petrol and diesel dominance to battery electric and to a lesser extent plug-in hybrid and hydrogen fuel-cell dominant fleet.

- A significant modal shift to other forms of transport e.g. rail, bus, cycling and walking away from private car use is required.

- Teleconferencing and the greater consideration of locating housing and workplaces in close proximity could, if implemented alongside modal shift for local journeys, assist in reducing emissions.

- A doubling of passenger distance travelled by rail could be needed by 2038 and for this to be by electric train.

- Buses could have an increasingly important part to play in decarbonising transport, picking up those journeys, along with rail, that have shifted from the private car. By 2038 it is likely that the entire bus fleet will need to be made up of battery electric and hydrogen fuel-cell derivatives.

- An increase in distance and tonnage of freight could be required, with potentially the heaviest loads being transferred to the rail network, subject to capacity (from both a rail and handling facility perspective).

- Diesel vans are likely to remain a significant part of the van fleet in 2038, along with battery electric and plug-in hybrids.

- The heaviest HGV loads could be taken off the roads and onto rail (subject to capacity) and are likely to be hydrogen fuel-cell and biomethane derivatives.

- Cycling and walking need to play an increasingly important part in reducing emissions and achieving climate change targets. By 2038 cycling

will need to have increased by nearly 18 times 2017 levels, with walking needing to increase by approximately 1.5 times 2017 levels;

- Leeds Bradford Airport will become an increasing source of emissions in 2030 and 2038, as other areas of the transport sector decarbonise.

2.33. The full results of the transport emission reduction pathways modelling, disaggregated to the City Region and West Yorkshire level, will be reported to the next Transport Committee meeting of 15 May 2020. In the interim period the technical work and finalisation of outputs will continue to be overseen by Transport Committee's Zero Emissions Transport Working Group.

Zero Emission Transport Working Group

2.34. Since the last Transport Committee meeting of 10 January there have been two further meetings of the Zero Emission Transport Working Group; on 15 January and 28 February 2020.

2.35. At the 15 January meeting, Members reviewed and provided comments on the Emission Reduction Pathways study and scenario framework and assumptions for technical modelling work in respect of the transport sector.

2.36. The Members were supportive of the overall approach to model different future scenarios. **Appendix 3** identifies the key points made by stakeholders (including the Working Group) on the scenario framework and assumptions set out in **Appendix 1.**

2.37. At the 28 February meeting of the Working Group, the Members reviewed and provided comments on the emerging transport related findings from the North and West Yorkshire Emission Reduction Pathways study. The Working Group was also provided with an update on progress to deliver the WYLES Review of actions to improve air quality. A verbal update will be provided by a Member of the Working Group to this meeting of Transport Committee.

2.38. The next meeting of the Working Group is scheduled for 1 April 2020. The meeting will focus on reviewing the outputs of all the sectoral pathways, including transport. Further meetings will be scheduled for May to enable the Working Group to review the findings of the (Task 2) implementation roadmap and (Task 3) policy recommendations and as necessary to progress work on decarbonisation transport.

2.39. A very important piece of additional work will be to consider the inclusive growth implications of decarbonising transport. It is important that the impacts of decarbonisation targets, pathways and interventions on the poorest parts of society can be identified and that action can be taken to avoid or mitigate any negative impacts that might accentuate inequalities. An Equalities Impact Assessment will be undertaken for each of the identified emissions reductions pathways to help inform a choice of preferred pathway and actions.

3. Clean Growth Implications

3.1. The work described in this report is central to ensuring that the City Region understands how it can decarbonise key sectors by 2038 and make significant progress by 2030. Results of the pathways study will be feed into a refreshed Tackling the Climate Emergency Action Plan for the City Region and to the Combined Authority's connectivity strategy work to develop a pipeline of future transport interventions.

4. Financial Implications

4.1. There are no financial implications directly arising from this report.

5. Legal Implications

5.1. There are no legal implications directly arising from this report.

6. Staffing Implications

6.1. There are no staffing implications directly arising from this report.

7. External Consultees

7.1. External consultations to-date are identified in the section on engagement in this report from paragraph 2.6 to 2.14 and in Appendix 2. Appendix 3 summarises the plan for further engagement.

8. Recommendations

8.1. That Transport Committee notes the contents of this report and the emerging findings of the work to identify emissions reduction pathways for the transport sector.

8.2. That Transport Committee notes the engagement plan to ensure that the partner councils and stakeholders are actively engaged in co-designing the preferred pathways, roadmap and delivery action plans.

9. Background Documents

9.1. None

10. Appendices

Appendix 1 – Climate emergency background information

Appendix 2 – Engagement plan

Appendix 3 – Summary of stakeholder feedback