



Decarbonising Transport - Setting the Challenge: England's Economic Heartland response.

September 2020

England's Economic Heartland (EEH) is the Sub-national Transport Body (STB) for the region stretching from Swindon to Cambridgeshire and from Northamptonshire to Hertfordshire, incorporating the area identified by Government as the Oxford to Cambridge Arc Initiative. We provide the voice on the region's strategic infrastructure and services and lead the work on connectivity for the Arc.

In July, EEH published our draft Transport Strategy setting out the need for a new approach to the planning, development and delivery of infrastructure priorities. The strategy places the user at the heart of the transport system and sets the ambition to harness the region's strength as a centre for innovation in a way that will encourage the new business models necessary to meet the requirement to deliver net-zero carbon targets.

The vision for the Transport Strategy is supported by four key principles, these are:

- Achieving net-zero carbon emissions from transport no later than 2050
- Improving quality of life and wellbeing through an inclusive transport system accessible to all which emphasises sustainable and active travel
- Supporting the regional economy by connecting people and businesses to markets and opportunities
- Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways.

As defined by the Committee on Climate Change (2019), the net-zero carbon target applies to the UK economy, and "requires deep reductions in emissions, with any remaining sources offset by removals of CO₂ from the atmosphere (e.g. by afforestation)".

It is a challenging target for the transport sector, the largest carbon-emitting sector of the UK economy (accounting for 28% of greenhouse gas emissions,

and 33% of carbon emissions in the UK in 2018), and still heavily dependent on fossil fuels.

Transport-related emissions are a challenge for the EEH region, growing by 10% between 2012-2017, compared to 5% nationally. In 2017 the Heartland's transport emissions stood at 13,507kt, equating to 47% of the Heartland's total carbon dioxide emissions, compared with 37% nationally. Emissions per capita are higher in areas where there are significant sections of the Strategic Road Network, although there is also a correlation between high emissions and high car mode spilt/ poor access to public transport.

As a consequence and to better understand and frame the challenge for our region we have developed our [Pathways to Decarbonisation report](#). This was commissioned from Oxford University in collaboration with the NISMOD consortium. The document sets out a number of possible Pathways, highlighting the opportunities and challenges in meeting net zero.

If we are to meet these ever more pressing targets, we need a step change in the way we plan, develop and deliver infrastructure in support of planned growth, and do so in a way that maximises the potential for decarbonisation, through the widespread adoption of new mobility solutions and digital connectivity.

A focus on connectivity – both physical and virtual - serves to emphasise the importance of a co-ordinated approach to shaping the future of our places, one that aligns decision making across policy areas to achieve a common vision of the future. As a centre for science and technology-based innovation, and with more than one in 10 of the UK's knowledge sector jobs are located in the region, we are well placed to deliver and demonstrate new and emerging low carbon technologies and the interplay between energy, transport and data. In this we are helped by the commitment of the Universities in our region to work collaboratively in support of the ambition for the Oxford to Cambridge Arc initiative.

We see the challenge of decarbonising our transport system as an economic opportunity, one that is made tangible by the change in behaviours (by both businesses and individuals) in the post COVID-19 world.

EEH welcome the opportunity to support and work with the DfT. The Political and Business Leaders that are at the heart of the EEH partnership have the experience and accountability that enables them to ensure the alignment of activity across key policy areas.

EEH Response to Decarbonising Transport - Setting the Challenge

The six themes as set out in “Decarbonising Transport - Setting the Challenge” serve as strong thematic catalysts for change to the transport system. We have where possible, responded to the document under these themes – however some comments are standalone in nature.

Governance

The transport decarbonisation challenge in context of the scale of growth in the region is significant, requiring a co-ordinated response at pace and scale.

The EEH regional evidence base (collating local plan data, housing, employment, population growth, transport and environmental data) shows a projected Local Plan housing growth average of 27,822 new houses per year across the region, resulting in a total of approximately 862,000 new houses in those 30 years to 2050. According to ONS data the population will grow by 600,000 by 2041 on a rising trajectory to 2050. Mitigating the impacts of this growth, facilitating a doubling of economic output and delivering meaningful, targeted interventions to decarbonise transport, requires coordinated leadership to join up the approach to delivering strategic infrastructure and inter-regional services.

EEH is in a prime position to support this. We have built a strategic, collaborative partnership that facilitates co-ordination, cooperation and an overview of actions taken individually and collectively by our partners.

Realising the opportunity that exists to effect change could be accelerated by devolving appropriate responsibilities, outcomes and resource to sub-national bodies who would then work with their partners to enable delivery locally. Decarbonisation must be embedded as a first principal in the ‘DNA’ of how we manage and develop the transport eco system going forwards.

To begin this the DfT must address issues with the appraisal process which needs review in order to be fit for purpose moving forward. It is important to ensure that the appraisal process reflects the added value and desirability of improved digital connectivity as a way of reducing the need to travel. It should also consider explicitly the implications for carbon consumption of the options under consideration.

We welcome the positive steps that have been made by the department. However, there is a need for the level of investment – both in terms of resource and capital investment – to better reflect the scale of the challenge and the urgency with which it needs to be addressed. This program will be inter-generational and, on a scale not previously seen: It requires a new way of thinking, and leadership will be crucial.

If we are to affect the scale of change required Sub-national Transport Bodies and our partners need to be properly resourced if we are to deliver the

significant, long term investment required. Our local authority partners are operating under considerable financial pressure whilst dealing with ever growing demand for statutory services: additional funding is required as a consequence.

The added value of STBs, such as EEH, is our ability to focus on issues of common interest in an efficient and cost effective manner. The policy framework set out within our draft Transport Strategy applies policy requirements identified at the national level to the circumstances within our region. It therefore provides an effective way of ensuring those requirements are taken forward into implementation quickly, efficiently and effectively. Such a role should form part of the core responsibilities for STBs and should be funded accordingly by DfT.

Whilst EEH can provide this, we also recognise that responsibility for addressing emissions from transport remain unclear. To address this, we support the development of local and regional targets and carbon budgets, responsibility allocated to the relevant bodies and authorities at the earliest reasonable juncture.

Acceleration of modal shift

There's a need to ensure our investment decisions support rapid decarbonisation of public transport, and that the good (benefit) derived from these infrastructure interventions is realised. The Government needs to find new ways to account for this in the appraisal process, if these benefits can be properly realised and released (e.g. the benefits of cycling to regional economic performance and tax receipt) then a sustainable revenue stream for continued investment can be realised. We support this implicit approach to future funding for active travel as outlined in the "Gear Change" vision.

To deliver modal shift, low carbon transport choices (active travel and public transport) must be as attractive to the public as the private car is. Providing quality infrastructure and services, robust reliable journey times and high-speed digital connectivity are supported in the draft Transport Strategy through our approach to delivering connectivity as a facilitator of decarbonisation and a driver in modal shift.

This is only part of the solution: Demand Management must play a part and be addressed at a national level (see below). Our Pathways to Decarbonisation report (pathway 4) assumes a general increase in the cost of car travel over time, achieved by applying demand management mechanisms in larger built-up areas. This drives modal shift as more journeys move to rail, bus and active travel modes in response to price increases. Without Demand Management of some type, it's difficult to see how targets will be achieved.

We welcome and support place making as an approach to decarbonisation. This requires further research and funding at a local level. For example, investigation of the opportunities offered by local interchange hubs, providing multiple and

complimentary community functions. Acting as interchange between modes, facilitating First/Last mile solutions, providing localised freight consolidation and co-working spaces as well as retail and residential facilities.

Whilst technical advances and electrification will accelerate decarbonisation of the sector, significant behaviour change is required. It will require effort in developing/enacting the “social contract” between government and the people required to deliver this change – which will ultimately lead to fewer private journeys than we currently make. A national approach to starting a long-term conversation with the public about driving less is needed.

Work carried out by the Tyndall Centre has suggests that even if all new cars were ultra-low emission vehicles by 2035, a 58% reduction in car mileage between 2016 and 2035 would be needed for car CO2 emissions to be in line with the Paris Agreement.

UK as a hub for technology and innovation

We welcome the recognition that innovation, data and digital connectivity will play a significant part in the decarbonisation of transport. Innovation in transport is at the heart of our strategy.

Our region is an area of significant economic strength and opportunity. We can further benefit business, our citizens and the UK’s “Levelling Up” agenda by releasing further potential and building on our success to drive innovation. In 2015, Oxford and Cambridge generated 4 and 19 times (respectively) the national average number of patent applications. In a recent Centre for Cities report, Oxford and Cambridge were the only two UK cities in the European top 20 for innovation. All the key attributes of Innovation growth are here. We have “high value” employment and a disproportionately high number of ‘knowledge’ jobs; South Cambridgeshire to 30%, South Oxfordshire (22%).

The region is home to “Motorsport Valley” delivering Low carbon solutions for the transport sector and driving future innovation and export opportunities. Several “Unicorn Start-ups” (e.g. Arrival) have made their UK base here and the region has the highest concentration of CAV related business in the UK.

To leverage this opportunity there needs to be further investment into digital connectivity as an enabler to innovation and decarbonisation. To facilitate good monitoring, live data collection, network management, the deployment of Connected Vehicles, robust digital connectivity will be a prerequisite.

Local and regional data platforms containing robust, reliable and good quality data underpin the mobility innovation ecosystem. In many cases, public sector data is held in silos and can be costly to the Transport Authority to publish (or open) in a useful way to innovators in academia and the Private sector. We support the development and funding of regional and National Transport Access points. Proving access to APIs in standardised formats would rapidly accelerate

the development of new digital services; integrated ticketing and Mobility as a Service etc.

We applaud the work that the DfT is undertaking in C-ITS, CAV and Digital Roads with UKRI, however efforts need to be redoubled to ensure that the UK remains "world beating" in this sector. EEH has world class Universities sector, an innovative start-up culture and established R&D capability in Mobility and energy sectors. Our region has excellent credentials as a living lab with a blend of urban, peri-urban and rural localities. The Department should utilise this and work with EEH and our partners in the development/deployment of the demonstrator "Zero Emission City" as presented in "Gear Change. A bold vision for cycling and walking".

Further investment/support of new modes such as Autonomous Very Rapid Transit (AVRT/micro-metro) underground logistics systems and drones are not explicitly mentioned in the document but will have a role to play in decarbonisation.

Place based solutions/challenges

Transport is a derived demand and as such reducing the need for people to travel to access services, goods and opportunities needs to be holistically addressed through better planning and provision. Demand reduction is not explicitly noted as an area of focus in the document. Any future action plans should have a seventh strategic priority for 'reducing demand for travel'.

Due to the spatial disparity between jobs and affordable housing, and poor provision of high-quality East/West public transport, our residents use their cars more and to travel further than the UK national average. As explicitly outlined in the draft Transport Strategy, this needs to be addressed though both the provision of new digital infrastructure (reducing the need to travel to access jobs, goods and services) and Demand Reduction. This will be central to achieving emissions targets: Potentially important solutions and policies such as better land use planning, home working, distance learning, vehicle ownership models and as pay as you go for road use are not currently highlighted as an area for consideration.

We highlight that several of the scenarios emerging from the Pathways to Decarbonisation report point to delivering a 20% reduction in the total number of car trips (taking in to account the growth in population) as requirement to meet the 2050 targets.

It's challenging to see how such significant mode shift will be achieved with just the deployment of "supply side" sustainable modes alone to influence behaviour. We recognise that mechanisms are in place for city/town centre demand management/road pricing, however we must (as a nation) look again at the

generalised cost of car-based transport. This is not directly outlined as a consideration in the document.

There is a significant urban focus to many of the walking, cycling and bus modal assumptions. Any action plan must consider how the millions of trips in rural areas are decarbonised and clearly articulate the rural vision for decarbonised transport. Whilst the challenges associated with connectivity apply equally to both urban and rural areas, the nature of the rural economy often accentuates the impact on individuals suffering from poor connectivity. The approach therefore needs to explicitly recognise the additional challenges of decarbonising our transport system in rural areas.

With the growth of EVs and the commitment to ban new petrol, diesel and hybrid vehicles from 2035, there will be a need for change to Vehicle Excise Duty fuel duty regime. There now exists the opportunity to align thinking on how we pay for our travel, with our policy objectives, and the need to decarbonise.

That discussion should include consideration of how individuals in all place types will access or pay for their travel in the future in an equitable way.

Cross sectoral, regional carbon budgets should be explored as a mechanism to deliver and monitor decarbonisation. This is challenging; delivering rapid emissions reductions, value for money and the prevailing spatial and socioeconomic conditions of a "place" will need to be considered in this process of budget allocation. CIHTs publication "Better Planning Better Transport Better Places" highlight the opportunities inherent in this joined up approach.

Decarbonising road transport

The scale of electrification required to support decarbonisation is significant - more than doubling current domestic energy consumption. Interdepartmental planning covering "upstream/downstream" with ESOs/ESCO/DNOs needs to be accelerated. Assurances are needed that the strategic infrastructure required to deliver decarbonisation in the transport system (and beyond) can and will be delivered in a timely manner and the regulatory framework to achieve that is in place.

This will provide assurance to the public and private sector and encourage further investment in Low carbon technologies and systems.

There also emerges a need to address wider energy policy and national security issues that may arise from additional demand from transport in conjunction with the wider systemic electrification of the economy.

There is an opportunity to use the National Infrastructure Planning Act legislative framework to align investment decisions in different policy areas to a common outcome that is expressed in terms of place.

If local authority partners are to take a leading role in the deployment of enabling infrastructure, they need to be resourced accordingly. Government funding is heavily weighted to capital expenditure. The process of installing and delivering public charging infrastructure (and more generally, low carbon journey enablement) requires significant officer time; the multi-agency approach required to deploy infrastructure is labour-intensive. Revenue funding must therefore be allocated to assure successful local delivery.

Ensuring continuity of supply chain in post Brexit needs to be addressed. Whilst UK manufacturing will need support to respond to J.I.T challenges (see certification of origin etc.) there remains a very real possibility that this will be a point of failure. Demand for EVs (Cars/LGV) currently outstrips supply and there are significant waiting times. This will inevitably reduce demand.

If the trend for larger, heavy SUV EVs continues, efficiency will remain an issue for the private vehicle fleet. The power and infrastructure requirements for road transport electrification would be significantly reduced if product specification standards on weight and size of vehicle are introduced.

The Hydrogen economy and infrastructure may have a significant part to play in road transport decarbonisation. However, the extent of that needs to be decided early to reduce risk of stranded assets. If placed at the centre of the transport decarbonisation programme, the investment required runs to <£100BN over the next 20 years. Significant further work is required to understand if this is the correct pathway for the UK to take. Hydrogen's role in heating and energy storage will have a large impact on cost and availability.

Freight – decarbonising how we get our goods and services

Decarbonising the freight and logistics sector is appropriately a strategic priority in its own right. The response to the CV19 pandemic has sharpened the focus we now afford the sector and the need for policy to enable it to continue to evolve and adapt to reflect the new economic situation.

The freight and logistics sector is a privately owned but utilises publicly owned infrastructure. Accordingly, it will require a partnership approach involving freight operators, infrastructure owners/operators and the Government if we are to decarbonise the sector. The critical importance of a partnership approach is emphasised by the continued evolution of the sector in response to changes in consumer behaviour and the continued growth in e-commerce in the retail sector.

It is unclear how the UK will change post CV-19 and the transition period following Brexit: One constant though is the need to produce, trade and supply goods. A possible outcome will be an increase in the domestic movement of goods and services, potentially spurred on by a shift to nearshoring/reshoring manufacture and a rise in e-commerce.

The EEH draft Transport Strategy has identified the need for some fundamental changes to our transport system (including freight) if we are to achieve the 2050 targets. It highlights the opportunity to use investment in strategic infrastructure to be the focus for sustainable growth. That the strategic investment / infrastructure must also be complemented by investment in local digital and low carbon enabling connectivity/infrastructure; in this way we can improve strategic connectivity but address the need to travel by car to access goods and services.

Irrespective of any short-term change in attitude towards living in built-up urban areas, planned development and our spatial geography will continue to drive densification. This will sustain the need to supply our towns and cities with goods and materials, as by their nature they will not produce them.

Whilst planning for the rise and importance of freight, growth alone would justify need to plan for a cleaner supply-chain; the challenge is exacerbated by virtue of the fact the industry is one of the most polluting elements of our transport system, where solutions are hardest to implement. This is most acute for long-haul lorry movements by HGV where the pathway to full electric is less certain. Despite research into alternative fuels and battery technology the current prognosis for a zero-carbon replacement for a 44-tonne lorry is discouraging.

We therefore suggest a stronger recognition of the role of rail freight in the 'movement of goods' strategic priority. Our work on freight and logistics has identified that a high proportion of road-based movements involve trips over 200/300 km and are subsequently prime candidates for a shift to rail, with the final stage being by delivered by battery/low carbon fuels.

Rail freight is a tried-and-tested zero carbon option, with most of the railway network already electrified and plans to infill gaps taken forward by Network Rail's Traction Decarbonisation Network Strategy. Delaying investment in favour of a technological breakthrough risks running down the clock. Government needs to commit the funding to enable the required long-term rolling programme of electrification to be initiated.

Concerning shorter urban deliveries, where technology does exist, Government should double down on the supply, regulation and incentives that increase the uptake of electric vans, including prototyping light trucks (7.5 tonnes). This will require a complete rethink of the land use priorities, infrastructure requirements and energy supply to support this modal shift.

Reducing carbon in a global economy

Airports have a role to play in enabling the UK to remain competitive, acting as a gateway and providing access to global markets. Where these are subject to expansion by way of Nationally Significant Infrastructure Projects, designed to increase the throughput of the airport, it is critical promoters use the disruption to the transport system during the construction period as the opportunity to implement measures that encourage fundamental and lasting change in travel

behaviour. The EEH draft Transport Strategy is committed to working with infrastructure owners/ operators, Network Rail, Highways England and the Government to improve surface access by public transport to international airports in order to reduce the environmental footprint of their operations, with priority given to Luton Airport. This focuses on improving travel opportunities via services on the Midland Main line and ensuring the right level of service and capacity on the Direct Air Rapid Transit service (DART).

It is essential that commitments that increase modal share in favour of public transport, whether cited in National Policy Statements or master plan proposals become legally binding obligations.

Support for these expansions should be conditional on the delivery of a comprehensive programme of investment in measures that result in a step-change in connectivity to/from the airport by non-car modes. In addition, any surcharge on vehicles should be ring-fenced for the purposes of reinvestment into the public transport network serving the airport.

Broader policy challenges

Nowhere in the document is the risk inherent in the delivery of current policy(s) to transport decarbonisation e.g. RIS2. This is understandable in the face of the ongoing legal challenges, however, there needs to be a discussion across government regarding prioritisation of the decarbonisation agenda.

Analysis of the relative contribution of policy(s) to the overall carbon reduction trajectories should be set out with associated costs. Once an understanding of the contributions of the different policy-levers is established, the DfT/STBs/LTAs must start closing the gap between the current projection and the 2050 zero target. There is a need to revisit the CCC carbon budgets (2023-2027) and (2028-2032) to set out a clear range of policies and measures to achieve them.

The challenge here is to set out a plan for subsequent policies/measures for carbon budget 6 and beyond. The Transport Decarbonisation Plan must reflect recommendations set out in the CCC report with a clear action for delivery.

Conclusion

EEH welcomes the opportunity to comment on the TDP we reiterate the need for swift actions and policy development.

The policy framework set out in our draft Transport Strategy draws on the assembled Regional Evidence Base and sets out how we propose the region should respond to realising economic growth whilst delivering net environmental gain.

Our work on Pathways to Decarbonisation has been instrumental in shaping the policy framework. The ambition across the region remains to accelerate delivery of our adopted pathway. However, that will require co-ordinated and aligned interventions at national, regional and local level.

We are committed to working closely with the department and officers to ensure that we continue to provide the strategic leadership that is required to support the delivery of these programmes.

Please do not hesitate to contact me if you have any questions or require additional information.

Yours sincerely

A handwritten signature in black ink, appearing to read 'J. Golding-Graham', written in a cursive style.

James Golding-Graham
Innovation & Decarbonisation Manager