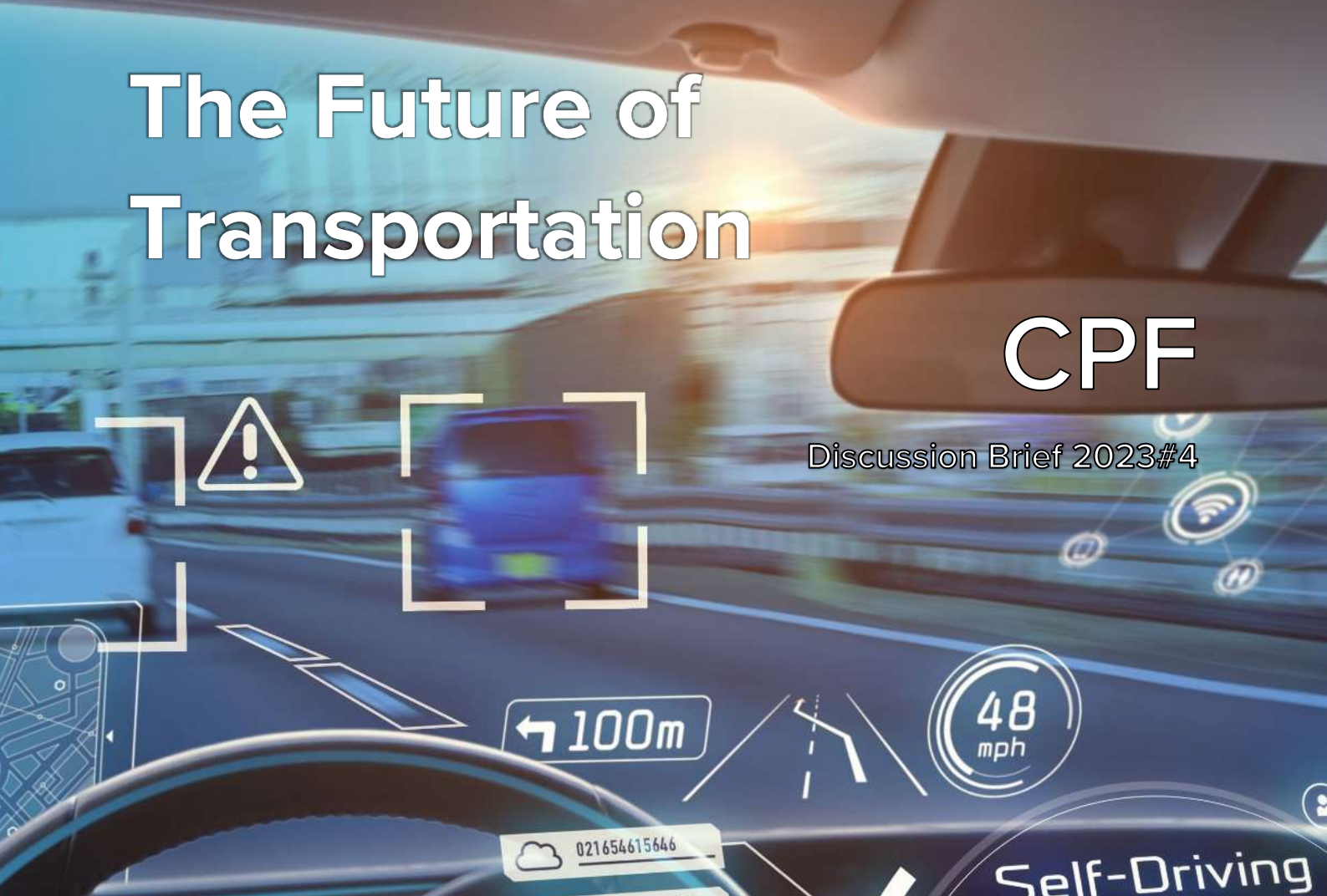
The Future of Transportation

CPF

Discussion Brief 2023#4



Contents

2023#4 The Future of Transportation 3
Setting the scene 4
Questions for discussion 5
Sources and Further Details 5

Dear Colleagues,

2023#4 The Future of Transportation

Thank you to everybody who submitted a response to our consultation on the future of deregulation and AI. This briefing paper is the second in our series of consultations looking beyond the short-term political horizon to the future.

Make sure that your Conservative Association or Federation has a date in the diary to be a part of this forward-looking agenda—and, as usual, be sure to invite as many members and supporters as possible. Please send your responses to the questions in this briefing paper to CPF.Papers@conservatives.com, using the associated response form published alongside the paper on the CPF website. The deadline for submitting your response is 5th November. We aim to publish our next discussion paper, on The Future of the Welfare State, on 6th November.

We look forward to hearing your views,

The CPF Management Team

John Hayward
CPF Manager

Penny-Anne O'Donnell
Voluntary Director

John Penrose
Chairman

Fleur Butler
Vice-Chairman

www.conservativepolicyforum.com
@ConservativePF

Setting the scene

"Electrification, connectivity, automation, and real-time data collection and analysis are driving the development of new modes of travel and new ways to do business. Some of these changes – such as transport apps, electric vehicles, drones and early vehicle automation – are already here; the rest are likely to ramp up dramatically between now and 2030." (Future of Transport programme)[1]

"New electric vehicles are expensive, and so lower income households may be trapped into owning and driving lower priced and more polluting vehicles, and so, they are also more susceptible to the additional cost of pollution charging in cities." (Future of mobility: inequalities in mobility and access in the UK)[2]

From Magnetic Levitation (MagLev)[3] to Hyperloop[4] trains; from on-demand microtransit buses[5] like Los Angeles County's Metro Micro[6] to electric vertical take-off and landing (eVTOL)[7] air taxis; developments in transportation promise to revolutionise our daily lives. By 2035, 40% of new cars in the UK could have self-driving capabilities.[8] The government agency Innovate UK "anticipate that the urban transport system, air transport, rail freight, ferries to and from UK islands and 90% of motorway HGVs will be fully autonomous by 2050."[9]

As transportation becomes increasingly connected and data-driven, the importance of protecting individual privacy and securing sensitive information will continue to grow. Connected and automated mobility (CAM) technologies will need good digital and data infrastructure, e.g., to access routing and efficiency services. Yet, 4G coverage across major roads in the UK is currently at just 66%, with rural coverage (57%) significantly behind urban coverage (84%).[8] Concerns have also been expressed[2] for the 1.7 million households who have no broadband or mobile internet access and 2.4 million adults unable to complete a single basic task to get online, such as opening an internet browser or using a mouse.[10]

In 2019, prior to the lockdowns and disruption of global supply chains, transportation and transport manufacturing generated over £109 billion added value for the UK and accounted for 27% of the UK's greenhouse gas emissions.[9] In 2022, added value for the UK was just over £94 billion[11] and transport emissions were 7.7% lower than in 2019, although transport remained the largest emitting sector, accounting for 34% of total emissions.[12] At present, vehicle excise duty and fuel duty together raise some £35 billion a year for the Treasury, equating to approximately 4% of overall tax receipts.[13] As drivers increasingly switch to electric vehicles, an alternative road charging mechanism will need to be introduced.

Ensuring that future policy is sustainable, efficient, and equitable will require government, industry and the public to work together. Urban areas in particular often suffer from poor air quality due to vehicle emissions. Yet, efforts to "clean up" transport locally are regularly criticised for ignoring or exporting environmental costs to other countries (e.g., producing electric car batteries emits over 70% more carbon dioxide than producing conventional cars, requires a lot of water and depends on metals only found in central Africa, often mined using child labour and resulting in local pollution)[14] and for sacrificing the economies of developing nations for little or no gain to the environment (e.g., the impact of the European Union's Carbon Border Adjustment Mechanism (CBAM) on Africa).[15]

Questions for discussion

1. What lessons might we draw from international examples in urban planning and reshaping transportation systems?
2. How might we accelerate the adoption of sustainable transportation solutions and develop the necessary infrastructure to promote national, regional and local growth without exporting environmental costs and pollution or inadvertently discouraging the development of other new technologies?
3. How might we replace the current tax revenue from conventional cars and how might this complement local congestion-reduction schemes and clean air zones?
4. What regulatory measures should the UK revise or introduce to ensure the safe integration of autonomous vehicles and the protection of passenger data?
5. How might we accommodate the projected need for increased airport capacity, while minimising the environmental impacts of air travel?
6. How might we bridge the digital divide and ensure equitable access to transportation services and infrastructure?
7. Is there any other observation you would like to make?

Sources and Further Details

[1] Future of Transport programme, Department for Transport, updated 3 February 2022, https://www.gov.uk/government/collections/future-of-transport-programme
[2] Future of mobility: inequalities in mobility and access in the UK, Government Office for Science, 8 March 2019, https://www.gov.uk/government/publications/future-of-mobility-inequalities-in-mobility-and-access-in-the-uk
[3] MagLev trains, Australian National University, https://physics.anu.edu.au/engage/outreach/_files/MAGLEV.pdf
[4] Five examples of futuristic tech in transportation, Techaeris, 12 May 2023, https://techaeris.com/2023/05/12/five-examples-of-futuristic-tech-in-transportation/
[5] Cities turn to microtransit to fill gaps in public transportation, Smart Cities Dive, 13 September 2022, https://www.smartcitiesdive.com/news/microtransit-public-transportation-gaps-jersey-city-via/631592/
[6] NextGen Bus Plan, Metro, updated 21 May 2022, https://www.metro.net/about/plans/nextgen-bus-plan/
[7] 5 Cutting-Edge eVTOLs Set to Revolutionize Urban Air Transport, MakeUseOf, 21 March 2023, https://www.makeuseof.com/evtols-revolutionize-air-transport/
[8] Connected and automated mobility 2025: realising the benefits of self-driving vehicles, Centre for Connected and Autonomous Vehicles, 19 August 2022, https://www.gov.uk/government/publications/connected-and-automated-mobility-2025-realising-the-benefits-of-self-driving-vehicles
[9] UK Transport Vision 2050: investing in the future of mobility, Innovate UK, 5 August 2021, https://www.ukri.org/wp-content/uploads/2022/01/IUK-110122-UK-Transport-Vision-2050.pdf
[10] *The Government has "no credible strategy" to tackle digital exclusion*, Lords Communications and Digital Committee, 29 June 2023, https://committees.parliament.uk/committee/170/communications-and-digital-committee/news/196028/the-government-has-no-credible-strategy-to-tackle-digital-exclusion/
[11] Gross value added of the United Kingdom in 2022, by industry sector, Statista, 9 July 2021, https://www.statista.com/statistics/285023/gross-value-added-gva-in-the-uk-by-sector/
[12] Provisional UK greenhouse gas emissions national statistics 2022, Department for Energy Security and Net Zero, 30 March 2023, https://www.gov.uk/government/statistics/provisional-uk-greenhouse-gas-emissions-national-statistics-2022
[13] Road pricing: Act now to avoid £35 billion fiscal black hole, urge MPs, Commons Transport Committee, 4 February 2022, https://committees.parliament.uk/committee/153/transport-committee/news/160791/road-pricing-act-now-to-avoid-35-billion-fiscal-black-hole-urge-mps/
[14] The Paradox of Lithium, Columbia Climate School, 18 January 2023, https://news.climate.columbia.edu/2023/01/18/the-paradox-of-lithium/
[15] E.g. *The EU's landmark carbon tool presents major catch*-22 for Africa, The African Climate Foundation, 15 June 2023, https://africanarguments.org/2023/06/the-eu-landmark-carbon-tool-cbam-catch-22-for-africa/