



Department
for Transport

Hydrogen in the Transport Sector

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OFFICIAL

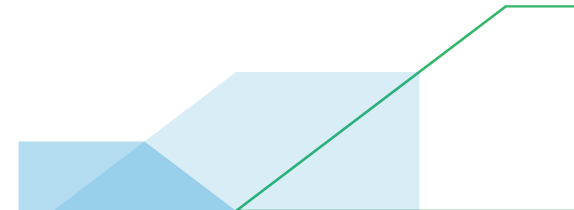
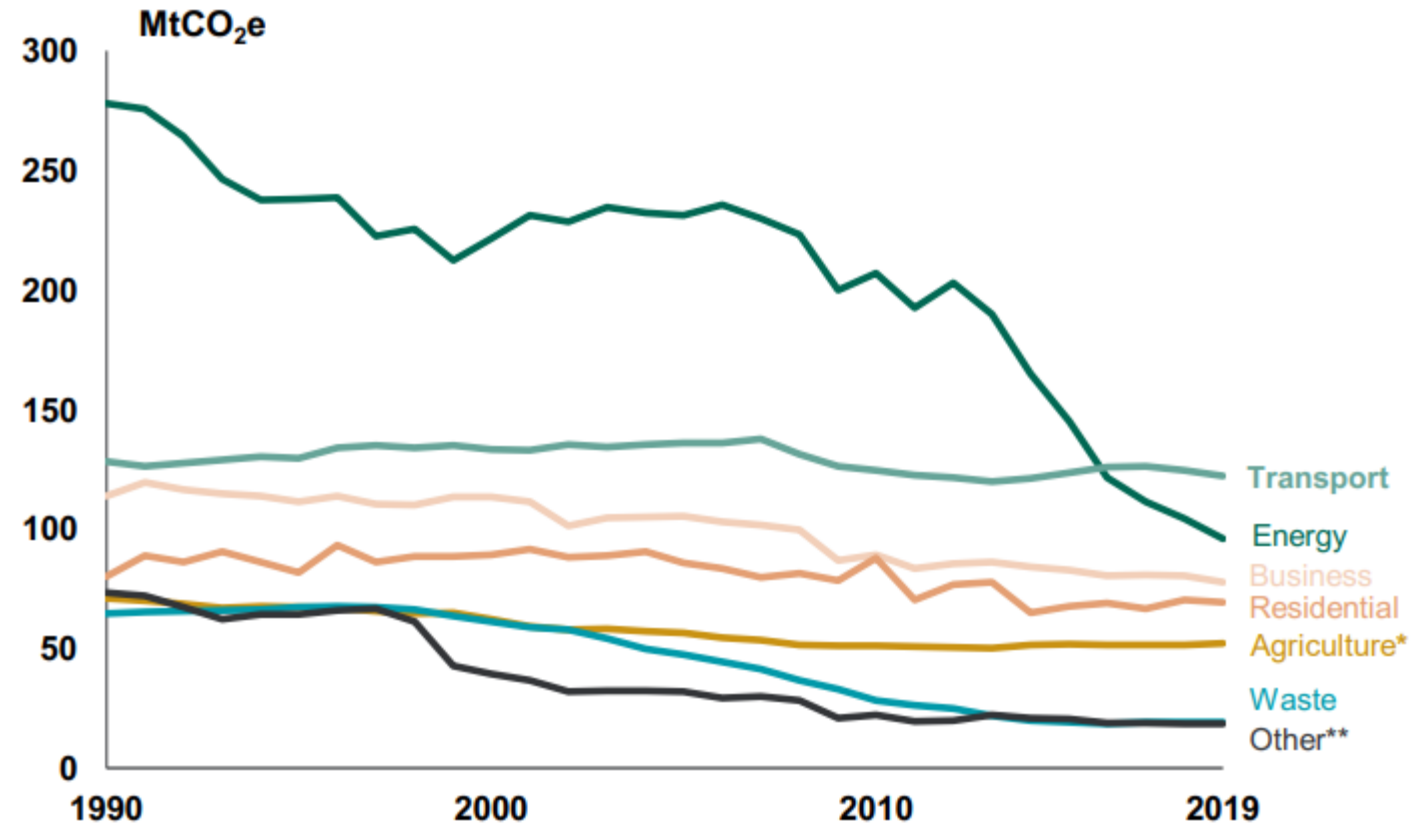
Why this is important

In 2019, transport produced 27% of the UK's total emissions (455 MtCO₂e) in 2019.

Of this, the majority (91%) came from road transport vehicles (111 MtCO₂e).

The biggest contributors to this were:

- **Cars and taxis** (61% / 68 MtCO₂e)
- **Heavy Goods Vehicles (HGVs)** (18% / 19.5 MtCO₂e)
- **Vans** (17% / 19 MtCO₂e).



Transport Decarbonisation Plan

July 2021



“

hydrogen, **fundamental** to achieving net zero in heavy transport applications and a major industrial opportunity. The UK's existing strengths and expertise along its value chain makes us well placed to generate significant quantities of green hydrogen from renewable electricity. Through bold initiatives such as our world first 'hydrogen transport hub' in the Tees Valley, we can now expand our innovation and infrastructure to create critical mass in its production and use.

”

UK Hydrogen Strategy

August 2021



“ Hydrogen is likely to be **fundamental** to achieving net zero in transport, potentially complementing electrification across modes of transport such as buses, trains and heavy goods vehicles (HGVs). It is also likely to provide solutions for sectors that will not be able to fully decarbonise otherwise, including aviation and shipping.

Transport is also a **crucial** early market for hydrogen, driving some of the earliest low carbon production in the UK. ”

Our past and present support programmes

Previous hydrogen for transport programmes



- £270 million last financial year through the Zero Emission Bus Regional Areas (ZEBRA) scheme (N.B. open to battery electric and hydrogen bids);



- £20 million for of our zero emission road freight demonstrator programme (completed March 2022) for feasibility studies;



- Up to £20 million for the 21/22 Clean Maritime Demonstration Competition, funding feasibility studies and technology trials in zero emission shipping;



- Up to £15 million in 21/22 for the 'Green Fuels, Green Skies' competition to support first-of-a-kind sustainable aviation fuel plants;

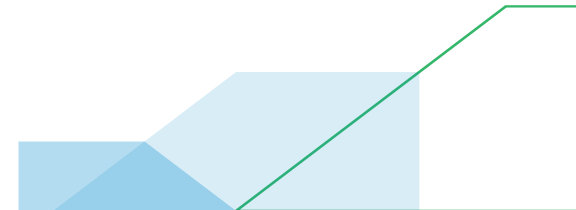
- £3 million Zero Emission Flight Infrastructure considered hydrogen.



- £3 million last year to support the development of a Hydrogen Transport Hub in Tees Valley, [and £4.8 million to support the development of a hydrogen hub in Holyhead, Wales (subject to business case approval)];



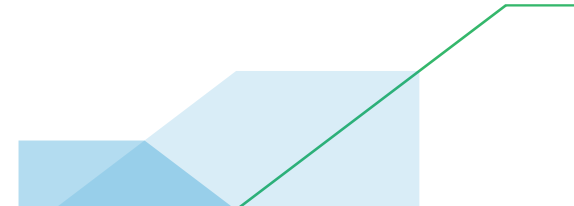
- £20m towards the Hydrogen for Transport Programme, delivering passenger cars and infrastructure across the UK;



Tees Valley Hydrogen Transport Hub (Phase 1)



- Seven projects
- £2.6m grant funding
- £3.9m total project value
- Many transport modes
- Temporary refuelling
- Lessons learned



Hydrogen for transport programmes this year



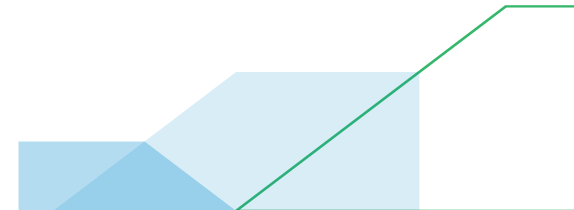
•Through the £206m UK Shipping Office for Reducing Emissions, (or UK SHORE), as part of the refresh of the National Shipbuilding Strategy, we will build on the success of last year's Clean Maritime Demonstration Competition. Hydrogen expected to play a major role.



•This March we announced the West Midlands Combined Authority had received funding for 124 hydrogen fuel cell buses and accompanying refuelling infrastructure through our Zero Emission Bus Regional Areas scheme, one of the most ambitious hydrogen bus projects in Europe.

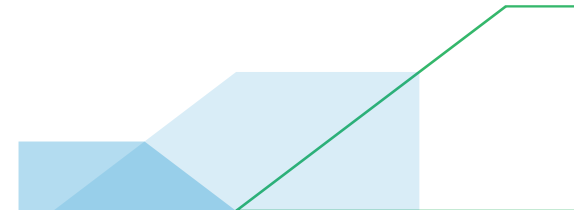


•In May 2022 we announced the second phase of the Zero Emission Road Freight Demonstrator (ZERFD) programme with £200m of funding. This project will rollout vehicles and infrastructure for both battery and hydrogen fuel cell HGVs in the weight categories between 40 – 44t.



DfT Policy Position

- In transport, the government remains technology neutral, and as set out in the Hydrogen Strategy and the Transport Decarbonisation Plan, sees hydrogen taking a significant role in decarbonising heavier transport applications, or where energy density requirements or refuelling times make it the best choice.
- Our dedicated R&D funding for hydrogen is focussed on heavier applications, such as maritime, aviation and road freight, or in regional hubs where transport can help support its use in industrial, energy and other sectors, such as the UK's first multi-modal transport hub in the Tees Valley.
- The evidence gathered through our R&D programmes will inform future policy and strategy regarding the roll-out of hydrogen infrastructure.
- We expect battery electrification to remain the dominant zero emission technology in the light duty sector, though there are some specific use cases where hydrogen currently offers advantages, such as where vehicles need longer ranges, more rapid refuelling, and other operational considerations.
- We recognise the potential for hydrogen to be utilised within combustion engines, if it can be shown to produce zero harmful emissions at the exhaust.



Renewable Transport Fuels Obligation

- The UK's regulatory tool for ensuring the provision of sustainable, renewable fuels to de-carbonise the UK transport sector
- Stimulates jobs in R&D and the renewable fuel supply chain
- Volume-based targets on fuel suppliers
- Met through tradeable certificates ("RTFCs") per litres
- A way for hydrogen suppliers to de-risk investment in transport supply infrastructure by lowering the cost per kg
- Current hydrogen requirements are for green (electrolytic) with a link to renewables (not grid)
- Some anaerobic digestion is covered depending on feedstock
- Consultation response is due soon on additionality



https://www.greencarreports.com/news/1114608_california-to-fall-short-of-100-hydrogen-fueling-stations-by-2020

Thank You

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