

Alternative Fuels: Beyond Fossils

Challenges facing the road freight industry,
and the way ahead



Midlands Connect
Transport | Investment | Growth

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Road freight and the carbon challenge



“Our reliance on fossil fuels is compromising our climate and the wellbeing of future generations. The changing climate is affecting our economy, the environment and our way of life.

I believe that the Midlands is well positioned to tackle this challenge by transitioning our energy system to renewable energy, and capitalising on the economic opportunities that present themselves along the way. I believe that to accommodate a growing economy we need to better manage the demand for travel and transition as quickly as possible to alternative fuels.

Several firms in the Midlands are seeing the potential opportunities for alternative fuels in our future economy and some are already investing in hydrogen projects and trials. Our job, at Midlands Connect, is to support councils and the Government to build the infrastructure needed for the region to be world leading in alternative fuel development.”



Maria Machancoses, CEO

The Context

Manufacturing, logistics and distribution is the lifeblood of the Midlands' economy, accounting for more than 40% of the region's GVA¹. The Midlands is home to more than a third of the country's warehouse space² and hosts 35 of the world's 50 leading automotive suppliers³, 1,300 supply chain firms and nine centres of excellence.

However, diesel is still the predominant fuel used by road freight vehicles with HGVs accounting for 21% of all road vehicle emissions according to Midlands Connect's own regional carbon baseline⁴. This shows the pressure the industry faces to innovate and adapt to the climate emergency and the Government plans to decarbonise all road vehicles by 2050.

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Around 80% of HGV fleets are operated by SMEs running < 50 vehicles

20% are operated by large firms with fleets > 100 vehicles

It is estimated that 60% of the fleet operates via depot-based refuelling

¹Source: Cambridge Econometrics data

²Source: <https://www.shdlogistics.com/property/midlands-continue-dominate-uk-warehouse-market>

³Source: <https://www.midlandsengine.org/wp-content/uploads/Midlands-Engine-automotive.pdf>

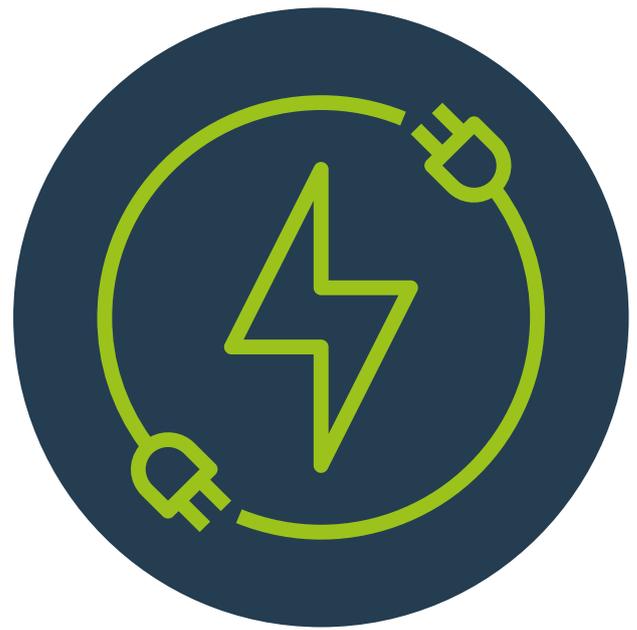
⁴Source: Midlands Connect's Carbon Baseline study

The role of alternative fuels

Our thriving freight and logistics sector faces a challenge to keep pace with market demand and reduce carbon emissions at the same time.

While the move away from diesel and towards renewable alternatives like biodiesel, electricity and hydrogen is already underway, solutions are in the early stages of development, they are expensive and come with the challenge of an industry which typically plans its fleet needs many years in advance.

Accelerating the adoption of alternative fuels in the freight industry must bring together the public sector, academia and private sector with a coordinated response that supports the industry to move towards decarbonisation sustainably.





The study

Over a two-year period, starting in 2019, Midlands Connect completed a pioneering and comprehensive study that looked holistically at the adoption of alternative fuels. It considered:

The challenges and opportunities facing Midlands businesses, local authorities and other delivery bodies;

Future scenarios for alternative fuel uptake based on the needs and working practices of the freight and logistics industry in the coming decades; and

Long-term policies and action plans to increase adoption of alternative fuels.

Midlands Connect examined, in conjunction with its partners, businesses and the haulage sector these objectives by investigating:

- **The planning, location and cost of future refuelling and recharging infrastructure;**
- **Which alternative fuels are likely to predominate for industry-wide adoption; and**
- **How to bring together public and private sector to remove barriers to uptake of alternative fuels.**

Our completed study explored what role Midlands Connect, as the region's sub-national transport body should play. We think we can play a key role in bringing together the logistics industry, local authorities, academia, energy suppliers, vehicle manufacturers and government. This approach will help promote and accelerate the uptake of alternative fuels.

The challenge

The freight and logistics industry is being pulled in opposite directions: consumer habits are driving down margins by demanding quicker, cheaper deliveries, while governments start to impose emissions targets that threaten a cost burden many SMEs could struggle to meet. What this means is the make-up of goods is **ever changing, which is combined with consumption increasing and more complex logistic structures, with the same goods being lifted many times between where they were originally produced and where they are ultimately consumed.**

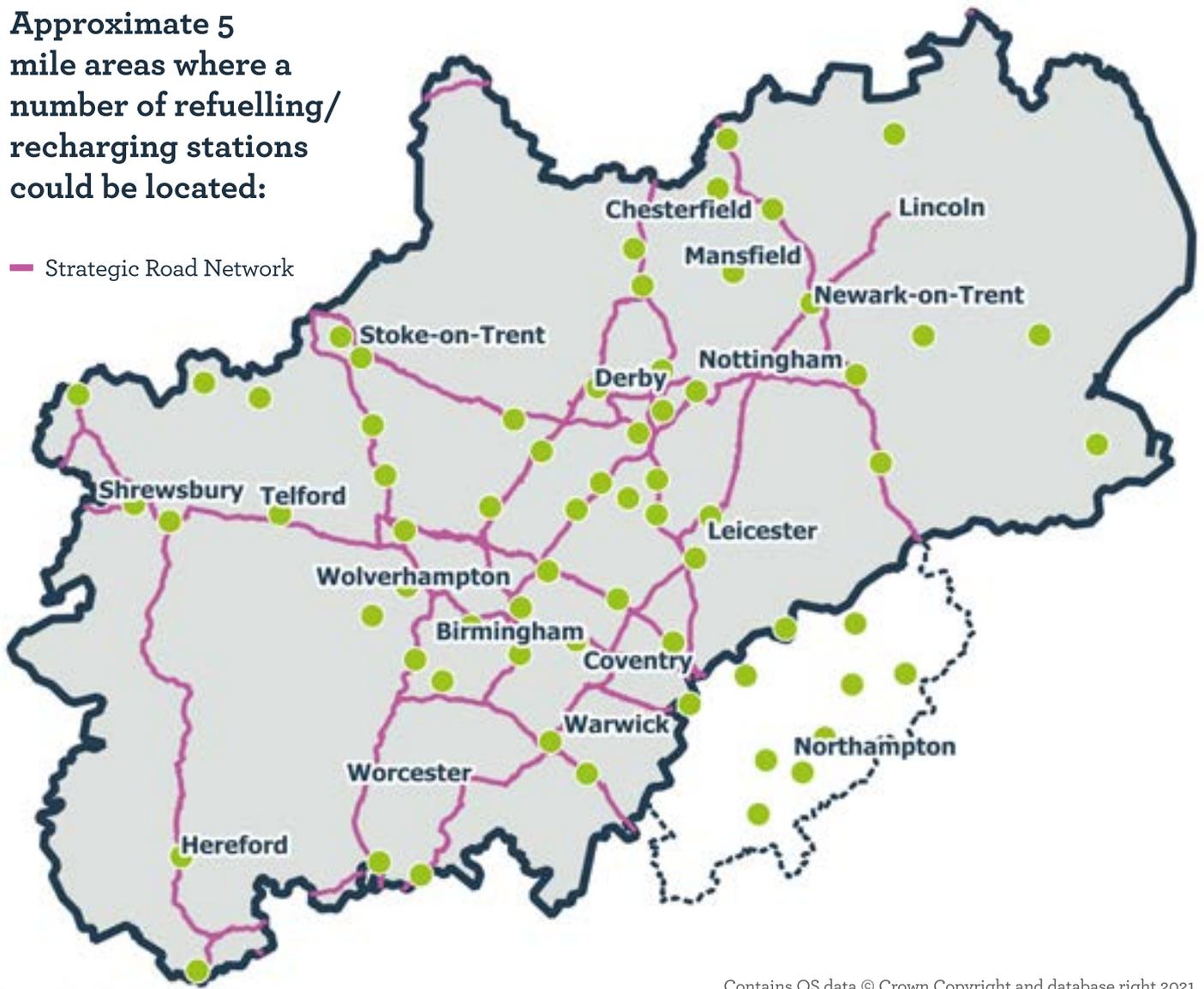
In 2019 Midlands Connect surveyed dozens of vehicle manufacturers and fleet operators on what's most important to the promotion of alternative fuels, and what's currently holding back greater adoption.

'We are witnessing a vicious cycle where a lack of recharging/refuelling infrastructure is resulting in limited vehicle take-up and vice-versa. We need the public sector to intervene, 'break the cycle' and inspire confidence and certainty for businesses.

The availability of recharging infrastructure, availability of vehicles and financial incentives to help scale alternative fuels across the Midlands are the clear priorities for suppliers and operators.

Approximate 5 mile areas where a number of refuelling/recharging stations could be located:

— Strategic Road Network



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The key logistics sites and freight service stations in the Midlands were identified.

Midlands Connect has carried out a high-level assessment focusing on identifying locations suitable for HGVs.

Some 66 locations were identified across the Midlands, with the highest concentration in the central part of the region. There are potentially a number of logistics sites and/or freight service stations within each location for recharging/refuelling needs.

1

The costs to install the recharging/refuelling infrastructure required for the freight industry in the Midlands by 2040 could be as high as **£800 million**.

2

In 2040, it is estimated that the HGV fleet in Midlands will require a maximum of **65 hydrogen refuelling stations**.

3

By 2040, it is estimated that the HGV fleet in Midlands will require a **maximum of 11 CNG/LNG refuelling stations**.

4

These refuelling stations could be situated within **66 new potential locations** throughout the Midlands (including Northamptonshire).

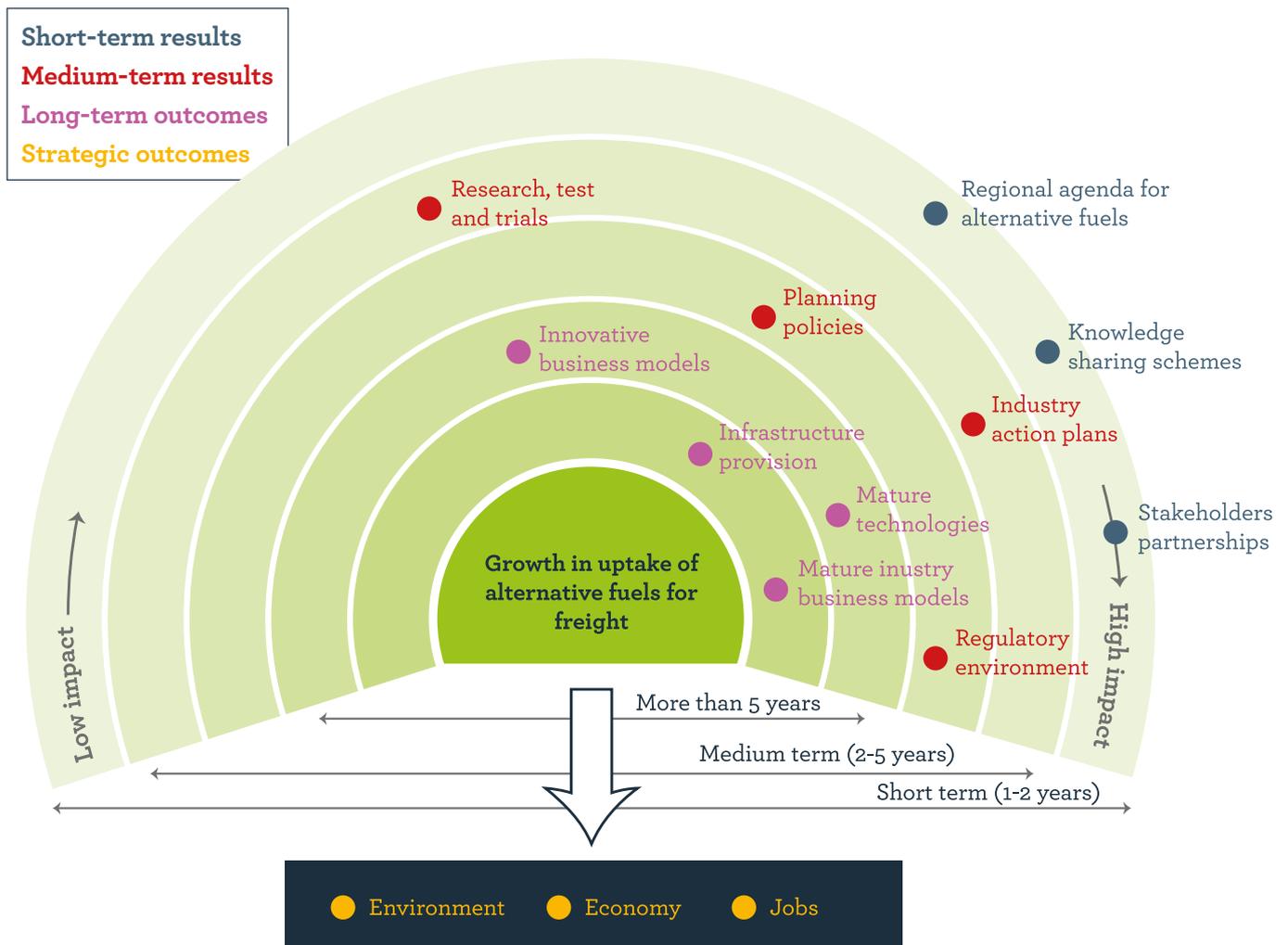
Action plan

This study outlines the opportunities presented by the uptake of alternative fuels in the freight and logistics sector, as well as significant challenges that must be overcome to ensure the timely decarbonisation of an industry that continues to grow and adapt to market trends.

All this work sits alongside projects being conducted by the Midlands Engine's zero emission road freight work.

Midlands Connect's assessment of how the region can facilitate and benefit from this shift to renewable fuels includes developing an Action Plan of recommendations to be taken forward, with a vision comprising four main themes:

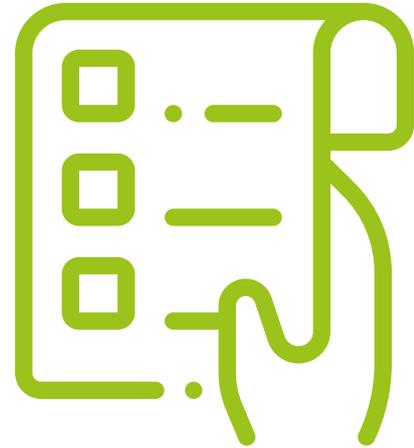
- 1 Midlands freight and logistics businesses should lead on the adoption of alternative fuels;
- 2 The Midlands road network must be equipped with appropriate recharging and refuelling infrastructure;
- 3 The Midlands should be a knowledge hub for alternative fuels research; and
- 4 The Midlands should be a test bed for innovation projects on alternatively fuelled vehicles and recharging/refuelling infrastructure.



These are the overall objectives being sought by our strategy

Recommendations

To ensure that this vision for the adoption of alternative fuels is realised, Midlands Connect is proposing a coordination role that brings together all relevant partners and stakeholders:



1. Coordination and collaboration

Midlands Connect is well placed, in partnership, to act as a coordinating organisation that brings together public sector, industry and academia to define targets for reducing carbon emissions and fuel adoption.

We suggest the establishment of working groups and events between public and private sector to foster best practice, and a roundtable between senior regional politicians and key business leaders with significant freight operations or supply chains in the Midlands.

2. Support for technology trials

Midlands Connect will engage with industry to facilitate the development of public-private funding programmes to support technology trials.

3. Develop proposals for refuelling/recharging infrastructure

Midlands Connect will work with academia and local, regional and national energy suppliers to develop capacity maps showing where installing recharging and refuelling infrastructure is likely to be feasible and cost effective.

4. Future of freight and logistics sector research

Midlands Connect will map the future development of the freight and logistics sector to forecast the impact of changes to consumer demand and government decarbonisation policies.



Midlands Connect is committed to working with local, regional and national stakeholders in the public and private sector to share best practice and ensure an industry-wide shift in focus to allow the timely uptake of renewable fuels to be delivered in a sustainable way.

