# The journey to zero emission commercial vehicles




Andy Eastlake

AREQuest Ltd
Engineering Clarity

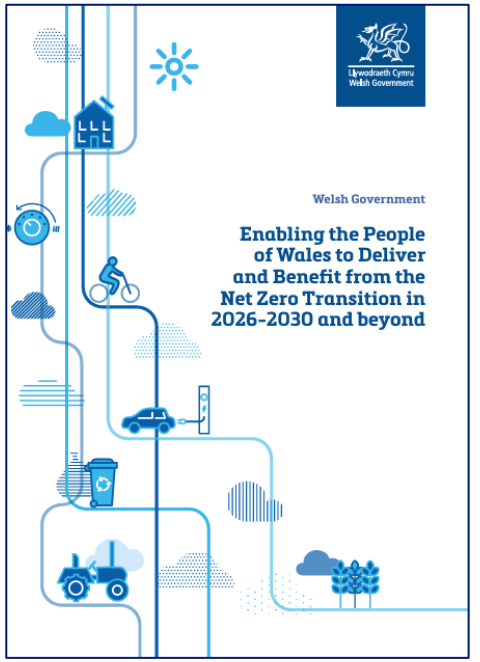
# Know where you're going and why

## Aligning the whole organisation with the vision from the top all the way through the company and to the customers.

- Net Zero is a legislated destination
- Transport has to make the greatest contribution to reductions in GHG over the next decade

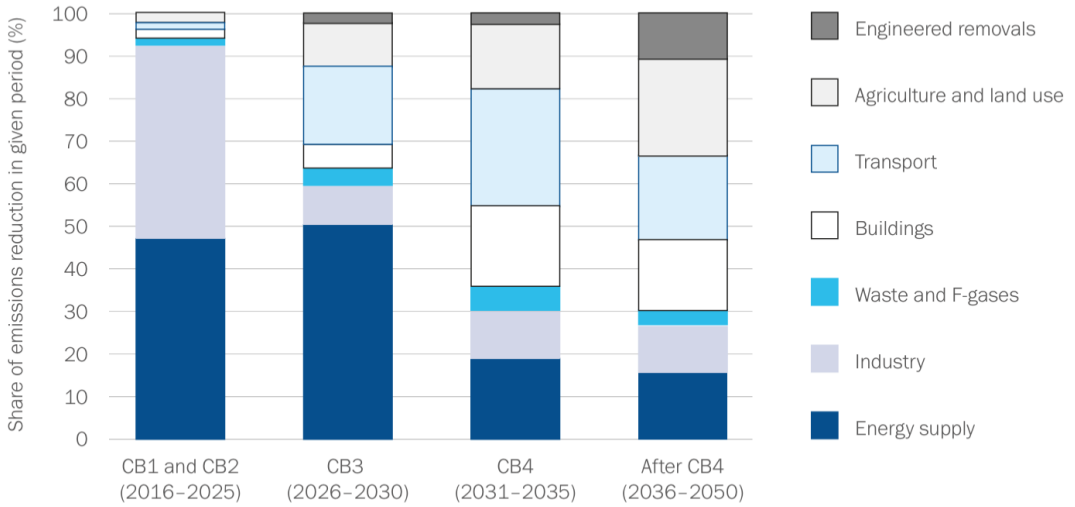
- The CCC pathway prioritises
  - Electric cars and vans
  - Zero emission HGVs
  - Modal shift and efficient driving
  - Conventional vehicle efficiency




**Distribution of emissions reductions during carbon budget periods**

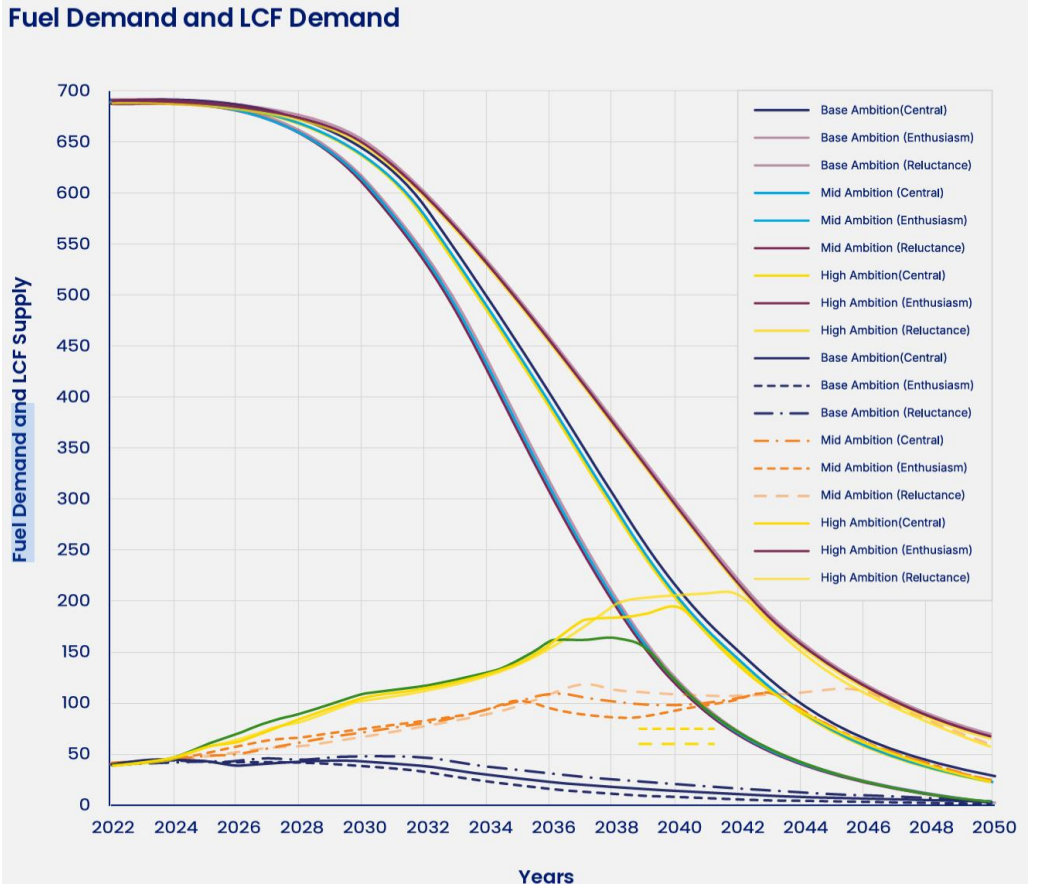
More than 60% of the emissions reduction required over CB4 are from mainly devolved sectors



# Start where you are, with what you have

## Do the best you can with what you have rather than delaying until it's perfect

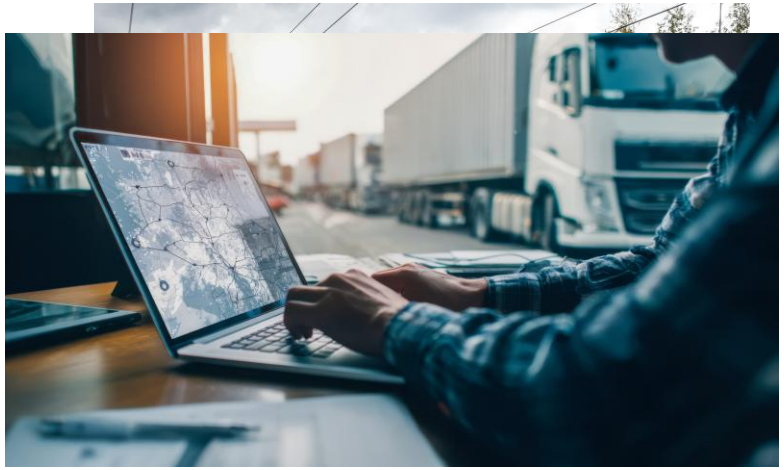
- Get data on current fleet and operations
- Measure and report baseline, then progress
- Welsh Fleet – Vans 95.6% diesel, HGV 99.3% diesel
- Welsh fleet –
  - 4339 Plug in Vans, with 1268 registered last 12 mths
  - 73 Electric HGV – with 7 registered last 12 mths
- In Wales Van miles are up 20% in last decade, HGV miles stable (ref DfT 2025)

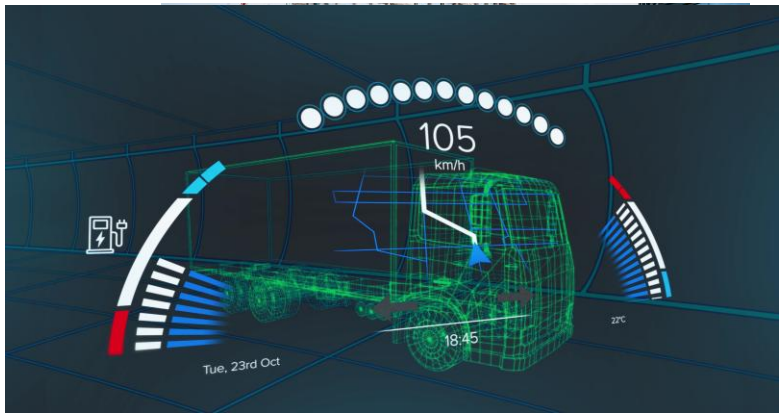


# Lots of small improvements add up

## Continuous evaluation and improvement wherever the ideas come from

- Where do you operate (Rural, Cities, emission zones?)
- When do you operate (rush hour, overnight?)
- Efficiency, Efficiency, Efficiency
  - Driver training
  - Route planning
  - Load consolidation
  - Collaboration and Co-location
- Lower carbon fuels in the same vehicles
- Competitor comparison








# Plan your whole journey and timing

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## The vehicle is one piece, the energy source, refuelling, site readiness and people are all key to the full operation.




- Each aspect must be considered, planned and timed for the journey to run smoothly
- No single advice source has all the right answers (ref ChatGPT)

| OPTION | BEST ROLE | SYSTEM REQUIREMENT | READINESS |
|---|---|---|---|
| **BATTERY ELECTRIC** | Default for vans; strong fit for predictable regional and urban work | Depot charging, public charging as backup | Now |
| **HYDROGEN FUEL CELL** | Potential niche for intensive, long-range or rapid-turnaround heavy work | Low-carbon hydrogen and dependable station | Trial |
| **RENEWABLE LIQUID FUELS** | Can cut lifecycle emissions in existing assets where supply is credible | Verified feedstock, emissions data and engine approval | Bridge |
| **HYBRID / EFFICIENCY** | Reduces fuel use while vehicles and infrastructure transition | Route optimisation, maintenance and driver practice | Now |

# Don’t start with the most difficult step

## Prioritise for impact and effectiveness and electrify where it works - fast

- Electrify urban operations
  - Local air quality benefits
  - Inefficient ICE operation activities (idling, stop start, low speed)
  - Shorter routes allow lower range (smaller cheaper batteries)
  - Highest visibility/public impact
- Shift your diesel use to renewable fuel where you can
  - Rapid carbon savings
  - Almost no operational change
  - Available today
  - HVO is no risk option if availability concerns
  - BioCNG network of public stations in place





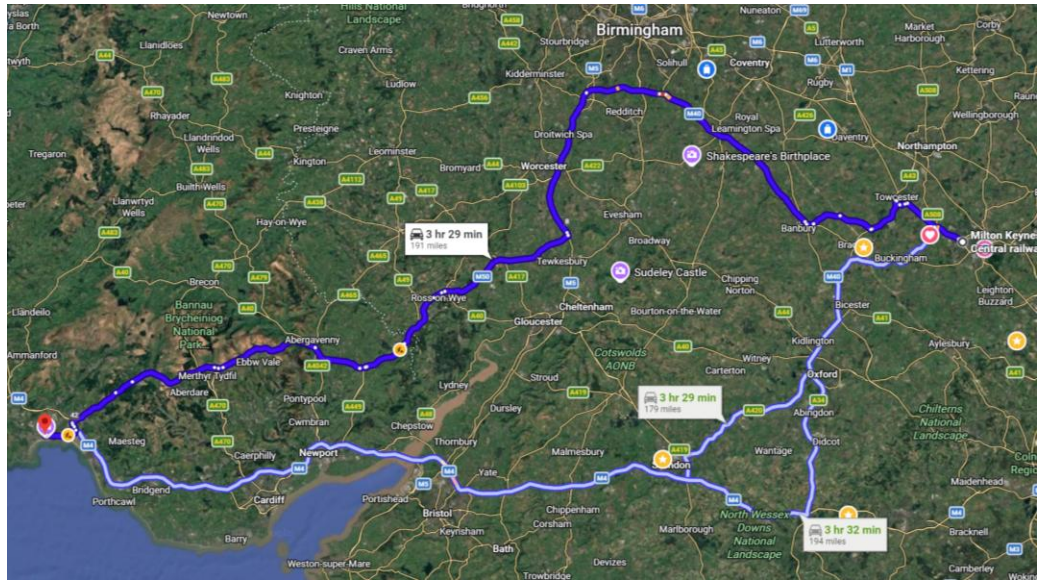


# The fastest route isn’t always the best

## Time isn’t the only measure of success and now isn’t always the best time

- The fastest isn’t always the lowest carbon
- Many factors to decide “the best route” for you, currently
- The route tomorrow may be slightly different
- Availability and price of fuel is critical
- Where and when to stop en-route is important

- Don’t take a route that isn’t built yet!






# Consider alternative options

## Low carbon HGVs are not the only option to reduce GHG

- Consider modal shift
- Last mile delivery options
- Consolidation centres
- Diesel isn't only for traction
  - Electric Transport Refrigeration Units (Reefers)
  - Ancillary power/engines (sweepers / PTOs etc)







# Review after each step

## Check against metrics and get feedback from the customer

- What went well/Added benefits
- What can we improve
- Internal stakeholders
  - C suite, Drivers, Technicians
- Customers
- On time?
- On budget?

- Share and use the data to improve the next step

