Transport: Heavy Vehicles - Hydrogen

This lever controls the sub-levers listed in the table, and ambition levels are for the end year shown on the right-hand side.

Market trends suggest natural gas fuelled heavy goods vehicles (HGV) are becoming more popular. Fuelling these vehicles with hydrogen is a natural next step towards eliminating tailpipe emissions in heavy vehicles as an alternative to electrification.

Fuel cells are one way to eliminate tailpipe emissions in articulated HGVs and have some advantages over batteries, such as quicker refuelling times which means range is not an issue. However, the challenges for widespread H_2 vehicle adoption are the high upfront costs of vehicles and producing enough low-carbon hydrogen of sufficient purity if fuel cells are to be used. A lack of hydrogen refuelling infrastructure, including storage, also poses a challenge.

Key Interaction

The carbon intensity of H_2 production would need to be significantly reduced for example using carbon capture, in a scenario in which H_2 vehicles play a large part in reducing the UK's CO_2 emissions.

If the combined share of all heavy vehicle fuel types (electric, hydrogen, PHEV and biofuel) exceeds 100%, the Calculator uses the priority order on the bottom right to determine which levers are applied.

Level 1

Efforts to increase uptake of hydrogen vehicles are abandoned and the share remains at current levels, near zero.

Level 2

50% of articulated HGVs and 40% of buses are fuelled by hydrogen.

Level 3

80% of articulated HGVs and 60% of buses are fuelled by hydrogen.

Level 4

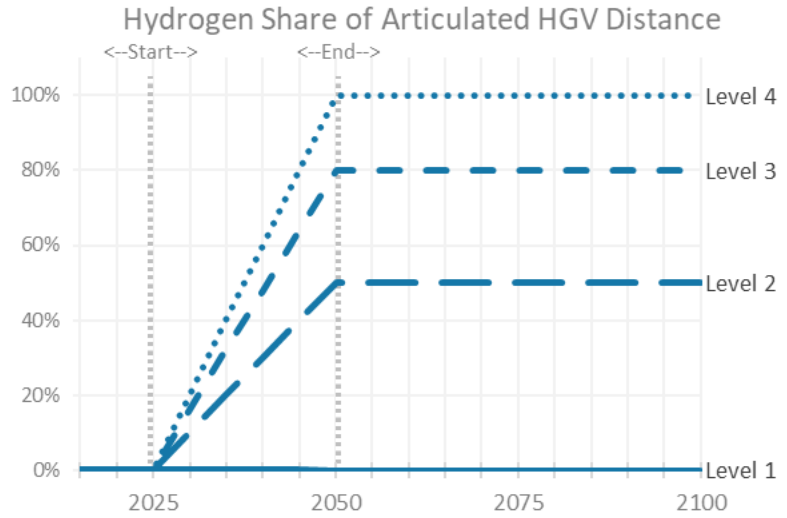
All articulated HGVs and buses are powered by hydrogen.

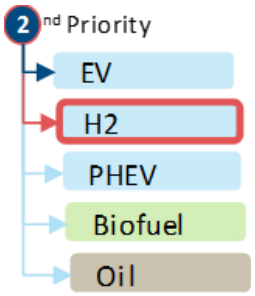
Default Timing

Start year: 2025, End year: 2050

Hydrogen share of vehicle distance

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
HGV Articulated	share	0%	0%	50%	80%	100%
Bus	share	0%	0%	40%	60%	100%





Lever Priority

Hydrogen vehicles are second in the priority order for heavy vehicles.

Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them.

Conventional fossil fuelled vehicles meet any shortfall in demand.