

# Transport: Light 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.

Light Vehicles refers to cars, vans and light lorries (rigid HGVs). In 2015, almost all of the UK's light vehicles were powered by fossil fuels (petrol or diesel) although other lower carbon options, such as hydrogen powered vehicles, were technically feasible. Light vehicles fuelled by hydrogen are likely to be powered by fuel cells rather than internal combustion engines.

Hydrogen (H<sub>2</sub>) powered vehicles, in common with electric vehicles (EVs), have zero emissions at the tailpipe. However, the challenges for widespread H<sub>2</sub> vehicle adoption are the high upfront costs of vehicles and producing enough low-carbon hydrogen of sufficient purity for the fuel cells. A lack of hydrogen refuelling infrastructure, including storage (on and off the vehicle), also poses a challenge.

## Key Interaction

The carbon intensity of H<sub>2</sub> production would need to be significantly reduced for example through carbon capture, in a scenario in which H<sub>2</sub> vehicles play a large part in reducing the UK's CO<sub>2</sub> emissions.

If the combined share of all light vehicles 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.

## Level 2

One third of cars and vans are hydrogen fuelled along with 5% of small lorries.

## Level 3

Two-thirds of cars and vans are hydrogen fuelled along with half of small lorries.

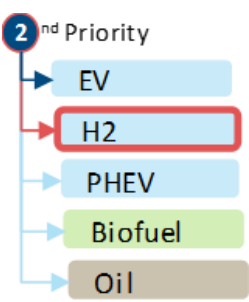
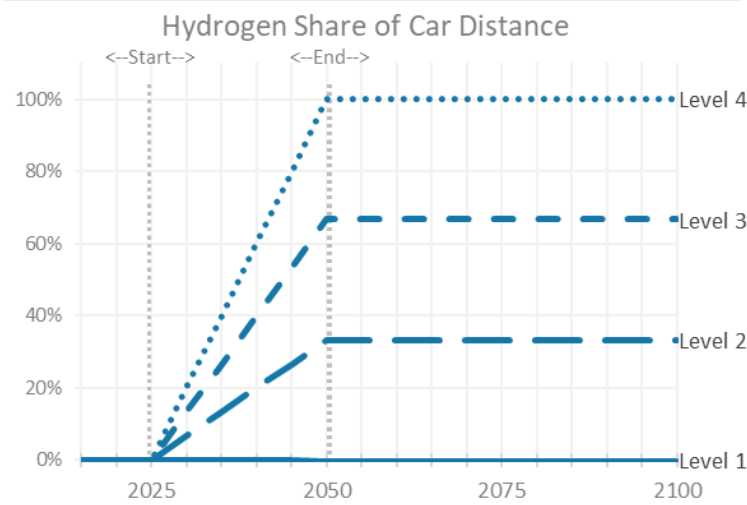
## Level 4

Hydrogen cars become the vehicle type of choice for light vehicles. Technological developments, policy and public engagement all align to allow limitations around the carbon intensity of H<sub>2</sub> generation, and refuelling network and costs, to be overcome faster than other low-carbon technologies.

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
Car	share	0%	0%	33%	67%	100%
LGV	share	0%	0%	33%	67%	100%
HGV Rigid	share	0%	0%	5%	50%	100%



## Lever Priority

Hydrogen vehicles are second in the priority order for cars, vans and light trucks.

Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them. Conventional fuelled vehicles meet any shortfall in demand.