

# Hydrogen energy for transport

Advanced Propulsion Centre UK Journalist briefing

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## Why does hydrogen make sense?



Harnessing renewable energy in a storable format for zero-carbon transport

Renewable Electricity

- Needs storage to extend demand and applications
- Supply is increasing



- Excess renewable energy can be used to produce green hydrogen
- Can be used for both combustion and fuel cells in transport

Extended Application

- New types of propulsion
- Buildings
- Industrial
- Balance of supply

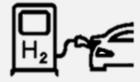
Four value streams in the transport hydrogen economy



Hydrogen production



Hydrogen storage, handling and distribution



Hydrogen refuelling stations and infrastructure



Vehicles and powertrain (stacks, balance of power & tanks)

### Over 14 GW of fuel cell stacks needed by 2035 for cars and vans produced in the UK



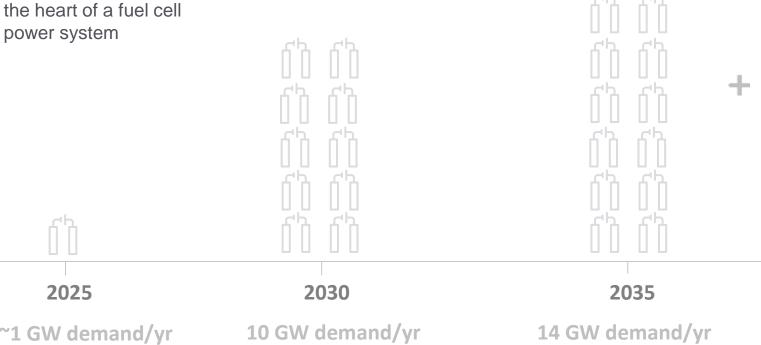
Heavy goods and offhighway

Light duty vehicle demand is driven by large sports utility and vans, with additional demand from heavy duty and off-highway vehicles





Image: Intelligent Energy fuel cell stack



**Current production** ~0.1 GW/yr = 1000 vehicles

2021

~1 GW demand/yr

The fuel cell stack is

**= 140,000 vehicles** 

## Over 400,000 hydrogen on-board tanks will be needed to meet the production demand of 140,000 fuel cell cars and vans in the UK

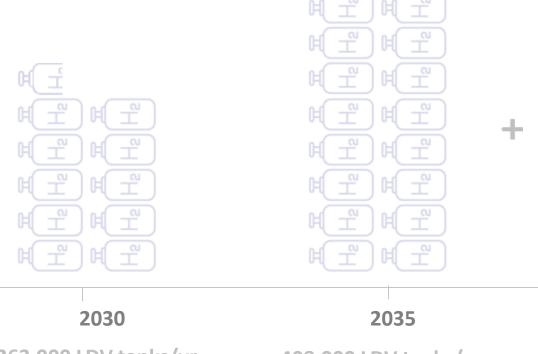


Heavy goods and

offhighway



On-board carbon fibre hydrogen pressurised tank, values and regulators





25,000 light duty vehicle (LDV) tanks/yr

2025

263,000 LDV tanks/yr

408,000 LDV tanks/yr = 140,000 vehicles



Accelerating Progress