CO_2 Removal & Gases: Hydrogen – Imports

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

An alternative to producing hydrogen in the UK would be to import zero-carbon hydrogen from countries with resources better suited for its production.

Hydrogen production is a major industry and currently around 50 million tonnes of hydrogen are produced each year worldwide. This is predominantly produced by steam methane reformation without carbon capture and storage (CCS), and so is not currently zero-carbon.

Key Interaction

The total demand for H_2 is determined by the level of gas grid conversion to H_2, the demand for gaseous fuels in buildings and industry, and demand from transport.

If electrolysis is needed to supply enough H_2 to meet demand, then sufficient low-carbon electricity is needed to ensure the H_2 conversion results in decarbonisation.

Level 1

There is no zero-carbon hydrogen imported to the UK.

Level 2

Zero-carbon hydrogen imports rise to 140 TWh/year.

Level 3

Zero-carbon hydrogen imports rise to 275 TWh/year, equivalent to natural gas imports in 2011.

Level 4

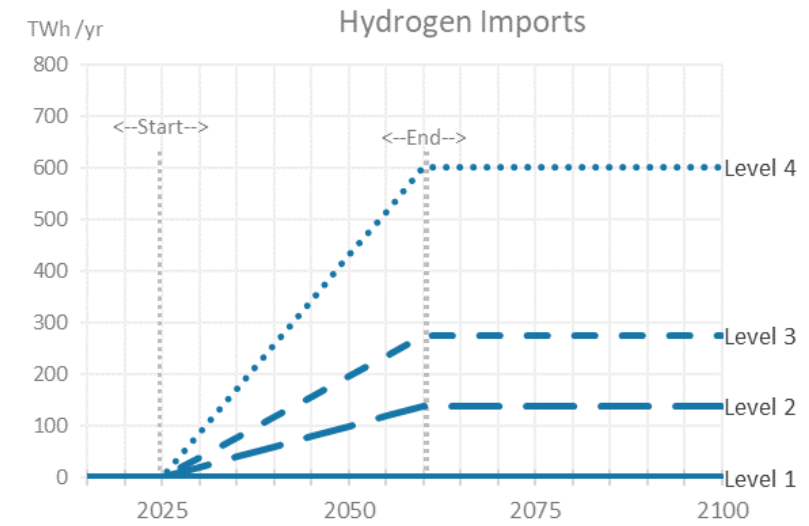
Zero-carbon hydrogen imports rise to 600 TWh/year, roughly equivalent to the historic maximum annual import of natural gas.

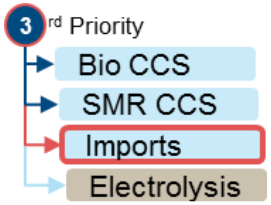
Default Timing

Start year: 2025, End year: 2060

Hydrogen production

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Hydrogen Imports	TWh/yr	0	0	140	275	600





Lever Priority

Imported hydrogen is third in the priority order for producing hydrogen.

Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them.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