CO_2 Removal & Gases: Hydrogen Gas Share

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

Hydrogen is a fuel that produces no CO2 when combusted. It could be used for heating in buildings and industry and help to decarbonize the energy system if produced in a low-carbon way. In Kenya, over 70% of homes rely on biomass for heating needs. Many industries in Kenya rely on fossil fuels and biomass to meet their heating needs. Conversion from fossil fuels to green hydrogen would allow the industry heating needs to be met by hydrogen, therefore, eliminating carbon emissions at the point of combustion.

In the calculator, the hydrogen gas share represents the proportion of the industries that have been converted from using fossil fuels for their heat requirements to running on 100% green hydrogen. In 2015, about 358 thousand tons, equivalent to 3.9 TWh of fossil fuels was imported for use by the industries.

Processes currently running on fuel oil such as industrial boilers will require modification or replacement to run on hydrogen.
for milk and so is the production of pig/swine and poultry.

Key interaction
H2 production must be low carbon to derive benefits from switching to hydrogen. H2 can be produced by electrolysis of water using renewable energy (green hydrogen), biomass gasification with CCS, zero-carbon imports, or steam methane reformation with CCS.

If electrolysis is used to supply H2 then enough low-carbon electricity is needed to ensure the H2 conversion results in a reduction in emissions. If the electricity used is supplied from unabated natural gas, then overall emissions will increase.

The demand is affected by how we heat our buildings and the power industry.

Level 1
None of the industrial heating needs is converted to hydrogen.

Level 2
One-third of the industrial heating needs is converted to 100% hydrogen.

Level 3
Two-thirds of the industrial heating using fossil fuels is converted to 100% hydrogen.

Level 4
The entire industrial heating needs using fossil fuels in Kenya is converted to 100% hydrogen.
2 % respectively.

Default Timing

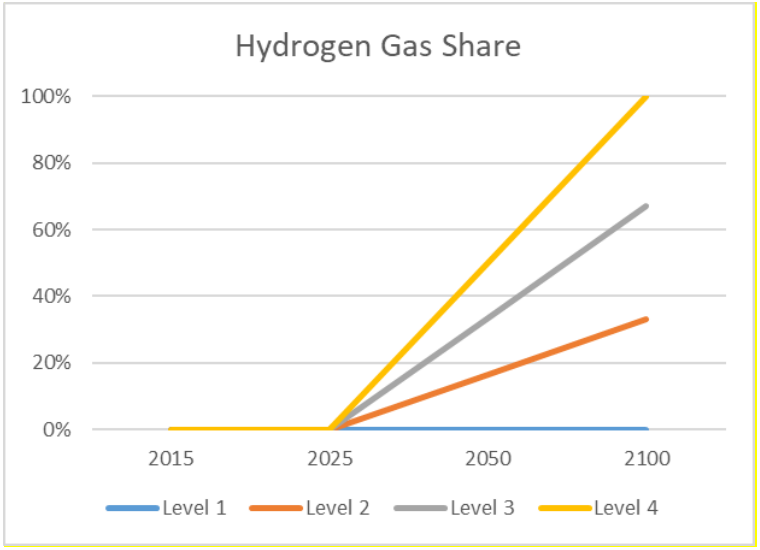
Start year: 2020, End year: 2050

Sub-lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Hydrogen gas share	Share	0%	0%	33%	67%	100%

Lever Priority
Electrolysis of water is the priority for producing hydrogen.

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

Biomass with CCS will meet any shortfall in demand.



Ministry of Energy