Industry: Industry Shift to Gas

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

Switching to gas from the gas grid, and away from coal and oil is one way in which industry can reduce carbon emissions. This is because gas has a lower carbon content than coal and oil. In addition, the gas grid supply can be decarbonised using hydrogen and/or biomethane (via the Hydrogen and Biomethane Gas Grid Share levers).

If switching to natural gas from the gas grid, industrial carbon capture and storage (CCS), which is controlled by the industry CCS lever, has the potential to reduce CO2 emissions further. Negative emissions can be achieved by CCS in relation to the biogas content of the gas grid. If the gas grid has been converted to hydrogen, emissions at the industry point of use are zero and industrial CCS is not necessary, since CCS is assumed to be applied to hydrogen production.

Gas use is already high in the chemical industry. In Asia, the majority of cement kilns are fuelled by natural gas.

Key Interaction

Decarbonisation of the gas grid by increasing the shares of biomethane and hydrogen can reduce emissions from gas consumption in industry (see the Hydrogen Gas Grid Share and Biomethane Gas Grid Share levers). If the gas grid remains fuelled by natural gas this lever will start to increase emissions at the point electricity or biomass start to be replaced.

Level 1

Gas usage in industry stays roughly the same as in 2015.

Level 2

Ambition level is 1/3rd of the difference between Level 1 and Level 4. Around half of industry energy needs is met by gas.

Level 3

Ambition level is 2/3rds of the difference between Level 1 and Level 4. Around two thirds of industry energy needs is met by gas.

Level 4

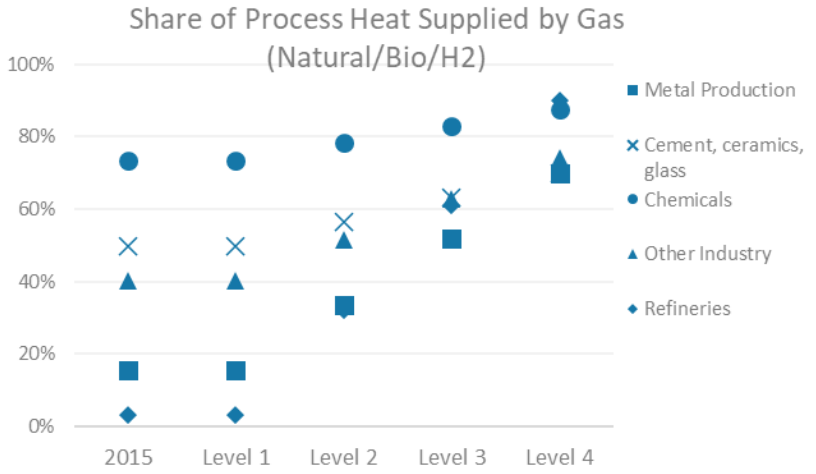
Gas switching in industry reaches maximum potential suggested by expert opinion.

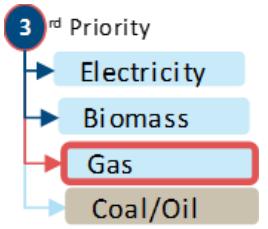
Default Timing

Start year: 2020, End year: 2050

Share of process heat supplied by Gas (Natural/Bio/H_2)

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Iron, Steel & other metals	share	15%	15%	34%	52%	70%
Cement, ceramics, glass	share	50%	50%	57%	63%	70%
Chemicals	share	74%	74%	78%	83%	88%
Other Industry	share	40%	40%	52%	63%	74%
Refineries	share	3%	3%	32%	61%	90%





Lever Priority

Gas is third in the priority order for supplying process heat to industry.

Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them. High carbon fossil fuels (coal and oil) meet any shortfall in demand.