Industry: Industrial Electrification

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

Electrification of heat in industrial processes allows for carbon emissions to be avoided at the point of use and supports decarbonisation of the energy system as a whole if electricity generation is low carbon. However, whilst technically feasible in many instances, electrification may not be the most cost-effective means to decarbonise. Different industrial sectors have different degrees of electrification that are possible due to the suitability of electrifying certain processes.

Key Interaction

Low-carbon electricity must be generated to maximise emissions savings from electrifying industrial processes.

Level 1

In 2050, the share of electricity used does not change from the base year.

Level 2

Between a quarter and a third of heat demand in industry is met by electricity.

Level 3

Around half of heat demand is met by electricity.

Level 4

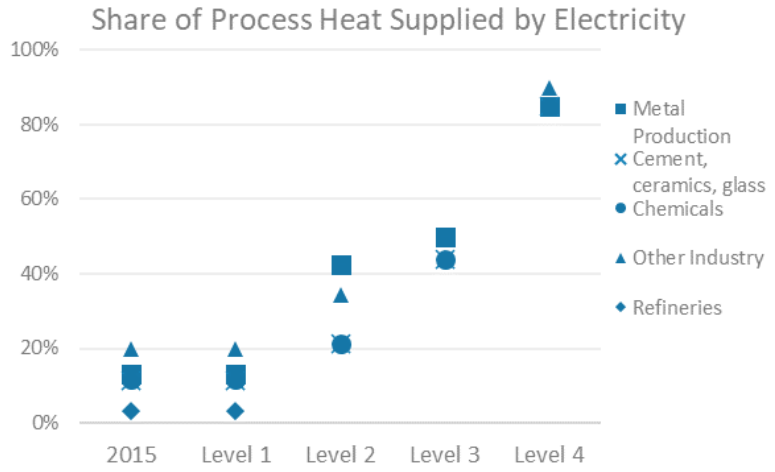
The maximum potential for electrification of industry is achieved, although it may not be the most cost-effective approach, and this level of ambition could result in more industry being driven offshore.

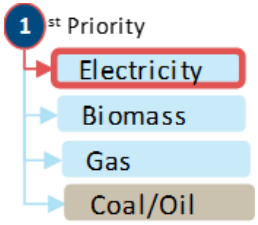
Default Timing

Start year: 2020, End year: 2050

Share of process heat supplied by Electricity

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Iron, Steel & other metals	share	13%	13%	43%	50%	85%
Cement, ceramics & glass	share	11%	11%	21%	44%	85%
Chemicals	share	12%	12%	21%	44%	85%
Other industry	share	20%	20%	35%	50%	90%
Refineries	share	3%	3%	21%	44%	85%





Lever Priority

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Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them.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