Transport: Heavy Vehicles - Electric

This lever controls the sub-levers listed in the table, and ambition levels are for the end year shown on the right-hand side. Units of 'Index' are relative to 2015.

The heavy loads and long distances involved with heavy duty vehicles pose significant problems when considering electrification to eliminate tailpipe emissions. One such problem is the size of the battery required to provide sufficient range. The increased size and weight of the battery reduces the amount of cargo the vehicle can carry. Charge times also increase. Batteries are appropriate for vehicles travelling shorter journeys with lower payloads, such as local bus routes or a subset of HGV journeys. However, long distance and heavy transport services, such as freight and passenger rail, and articulated HGVs may require a different solution.

Overhead power lines avoid the need for large batteries and are more appropriate for these types of applications since there are plans to electrify the Standard Gauge Railway (SGR) in Kenya

The base year selected is 2015. Four ambition levels are assumed as below.

Key interactions

Low-carbon electricity must be generated to maximize emissions savings from electrified transport.

Level 1

Efforts to increase uptake of electric vehicles are abandoned and shares remains at current levels.

Level 2

Electric vehicle share increases gradually to 80% of passenger rail, and 40% of rail freight and 20% of buses.

Level 3

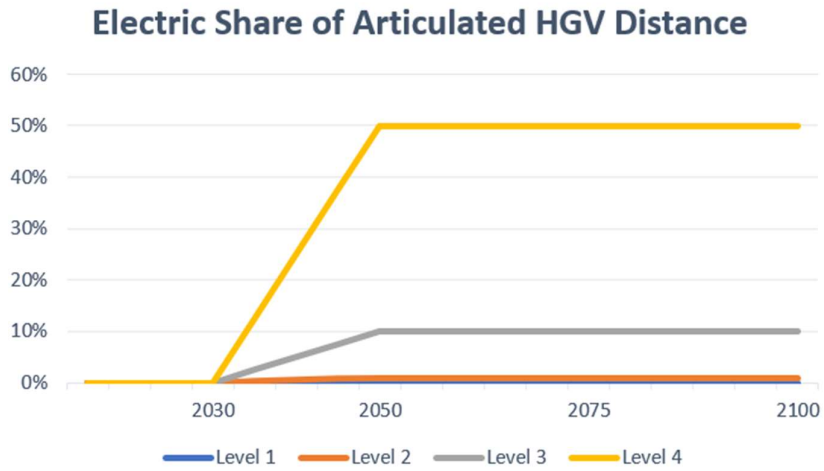
Electric vehicle share increases more rapidly to 90% of passenger rail, 75% of rail freight, 30% of buses and 10% of articulated HGVs.

Level 4

Battery technologies allow 50% of buses and lorries to be electrified. 50% of Articulated lorries and 100% of the rail system (SGR) are electrified by overhead powerlines rather than batteries.

Default Timing Start year: 2020, End year: 2050

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
HGV Articulated	share	0.0	0	0.01	0.1	0.5
Bus	share	0.0	0	0.2	0.3	0.5
Rail Passenger	share	0.0	0.65	0.8	0.9	1
Rail Freight	share	0.0	0.08	0.4	0.75	1



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