

Passenger transport – fuel efficiency improvement

This lever assumes that newer vehicles will be more energy efficient. Energy efficiency improvements can be gained from a range of measures such as reducing the weight and engine sizes of private vehicles and from actual improvements of the vehicle engines. The greatest share of this gain is assumed to be as a result of weight reduction. For this lever, most of energy efficiency gains for private vehicles is assumed to come from weight reduction while efficiency in public vehicles will come from engine technology improvements, and the gains are lower when compared to weight reduction.

Level 1

Level 1 assumes that there is no drive to reduce vehicle weights and the associated engine sizes. Hence there will be minimal efficiency improvement, as any fuel efficiency improvements will be voluntary as is the case in the country now. Therefore is a 0.1% efficiency improvement is assumed for private vehicles and a 0% is assumed for public vehicles, whose efficiency improvements are assumed to be as a result of engine design improvements not from weight reduction. The 0.1% annual energy efficiency gains will result in overall efficiency gain of 4% by 2050.

Level 2

This level assumes that the government introduces some stringent energy efficiency regulations. As a result of that regulation, car manufacturers will reduce the weights their cars and engine sizes. It is clear that vehicle weight reduction has the potential to reduce fuel consumption, but the precise relationship is not so obvious. It is assumed that 0.2% of efficiency will be gained annually, resulting in overall efficiency gain of 22% by 2050.

Level 3

Level 3 assumes that the government continues to support more energy efficiency vehicles such that 0.5% annual gain of energy efficiency is achieved. This gain will result in 44% overall energy efficiency.

Level 4

It is assumed that 1% of efficiency will be gained annually, resulting in overall efficiency gain of 66% by 2050. This is assumed to be the limit on efficiency gains since a car cannot be reduced in weight without having some limits.

Average fuel efficiency improvement in road vehicles

Efficiency Improvement	Every year			
	Percentage increase, private	0.1%	0.2%	0.5%
Percentage increase, public	0.0%	0.1%	0.2%	0.5%