

Freight transport – shift from road to rail

In South Africa freight is transported mainly by road and rail. Freight activity is measured by ton-km (equivalent to one unit ton of freight being moved one km). In 2011 70% of ton-km was serviced by road and the remainder by rail¹. Road freight uses light, medium or heavy duty vehicles. Light duty vehicles transport light freight in consignments too small to be suitable for other types freight transport. Rail freight can be typified as being corridor freight (along major and long distance routes), bulk export commodities or other freight. 100% of bulk export commodities are, and can only be, transported by rail.^{2,3}

The *freight* Lever shifts freight from heavy duty road vehicles to corridor rail transport, and from medium duty road vehicles to ‘other’ rail services.

Level 1

Level 1 assumes that, despite competition between road and rail services, the proportion of ton-km serviced by road and rail services remains at 70% and 30% respectively to 2050.

Level 2

Level 2 assumes that by 2050, a shift of heavy freight from heavy duty trucks to corridor rail increases the overall share of freight ton-km serviced by rail to 40%.

The shift is in heavy freight as rail transport can accommodate additional load from heavy duty vehicles more easily than from medium duty vehicles. Of other freight 5% of the load which was serviced by medium duty vehicles is moved by rail.

Level 3

Level 3 assumes that the ratio of corridor rail to heavy duty vehicle transport increases and that by 2050 it is 60:40. The proportion of rail to medium duty vehicles reaches 40:60.

Level 4

Level 4 assumes that by 2040, and ongoing to 2050, 70% of heavy freight and 45% of medium freight is serviced by rail. This is assumed to be the maximum percentage of freight than can be shifted from road to rail.



A Transnet wagon train
Source: <http://www.bdlive.co.za/business/>

The percentages shares of freight that can be transported by either heavy duty trucks of the rail corridor, or by medium duty trucks or ‘other’ rail services.

		In the year 2050			
Technology	Description	Level 1	Level 2	Level 3	Level 4
HCV	heavy duty trucks	70%	60%	40%	30%
RAILC	rail corridor	30%	40%	60%	70%
MCV	medium duty trucks	70%	65%	60%	55%
RAILO	rail ‘other’	30%	35%	40%	45%

¹ Viljoen, N., et al. 9th state of logistics survey for South Africa: connecting neighbours-engaging the world. Imperial Logistics, 2013.

² Tonnes and ton-km used to analyse the Transnet Freight Demand model were kindly provided by Cecil Musisinyani of Transnet.

³ Havenga, J. H., 2007. *The Development and Application of a freight transport flow model for South Africa*, Cape Town: University of Stellenbosch.