Domestic freight

In 2013, 99.1% of all Irish freight movements were by road and 0.9% was by rail. Almost all freight transport was powered by diesel or petrol engines. In 2013, the total amount of goods-movement was 9,138 million tonnes-kilometres – that equates to around 2,000 tonne-kilometres per person. The share of goods moved by road and rail is assumed to stay constant up to 2050. Changes in the distance of freight travelled in terms of vehicle-kilometres and improvements in engine efficiency are presented in the levers.

Freight transport reported here include heavy goods vehicles (HGVs), light goods vehicles (LGVs), 'marine navigation' and the fuel consumption of service and construction vehicles, encompassed in the 'unspecified' category in the Irish energy balance.

Trajectory 1

This trajectory assumes that goods movement as measured by vehicle-kilometres increases by 33% from 2013 to 2050 and that per capita it falls by 2%. A growth in movement of freight by rail in line with road freight growth reflects spare bulk rail transport capacity. The energy efficiency of road freight improves by 15% to 2050.

Trajectory 2

Trajectory 2 assumes that the efficiency of goods vehicles improves by 20% and that the vehicle-kilometres travelled increases by 25% by 2050.

Trajectory 3

Trajectory 3 assumes that by 2050, the movement of freight grows but less quickly than economic output (GDP). Lorries are twice as efficient. This trajectory assumes that overall vehicle-kilometres increases by 10% from 2013 to 2050. Taking account of population increase, there is a drop of 19% in vehicle-kilometres per person.

Trajectory 4

Trajectory 4 assumes that the volume of freight grows less quickly than GDP. All freight trains are electric. This trajectory assumes overall goods moved in 2050 stays the same as 2013. There is a drop of 26% in goods-movements per person. Lorries are almost 60% more efficient.

Interaction with other choices

Choices about building different sorts of infrastructure, about the use of waste, bioenergy and other fuels, and shifts in the size of Irish industry will all influence freight transport demand. The 2050 Calculator does not model the impact on freight of these choices; you have to make sure your choices are consistent.

We can power Ireland's lorries and trains by biofuel instead of diesel or petrol. To bring this about in the Calculator, choose either (i) to import bioenergy or (ii) to dedicate land to biocrops; and then turn those biocrops into liquid fuel.

Figure 3: Energy demand in TWh/yr for domestic freight (including HGVs, LGVs, marine navigation, and service vehicles)