

## Volume of waste and recycling

In 2013 Ireland produced around 2.5 Mt of municipal waste (household and commercial) and 3 Mt including wood waste, sewage sludge and other sources. In the same year, rates of recycling, energy from waste (EFW) and landfill were 40%, 19% and 41% respectively. Around 0.3 TWh/y of energy was generated from waste facilities, landfill gas, sewage gas and non-biodegradable waste in 2013. Around 36% of recovered municipal waste was exported for energy recovery or recycling.

Options for use of waste include energy recovery, but prevention, recycling, and re-use may be preferable.

The trajectories below represent different choices, rather than an increasing scale of effort. They cannot be compared with the Trajectories 1-4 in other sectors and have therefore been labelled as Trajectories A-D instead.

### Trajectory A

Trajectory A assumes that the overall quantity of waste increases by 50% in the period from 2013 to 2050 with economic recovery, increased employment and population growth. A high quantity of waste is exported (50%); 18% is sent to waste to energy facilities in Ireland, 10% is recycled, and 24% is directed to landfill. Waste to energy capacity in Ireland increases to around 0.7 Mt. 0.9 TWh/y of primary energy is generated in 2050.

### Trajectory B

Trajectory B assumes that the overall quantity of waste increases around 20% between 2013 and 2050. Double the share of waste is recycled domestically or sent to compost, 18% is incinerated and around 40% is exported for

recovery abroad. The proportion of waste sent to landfill reduces to 11% in 2050. 0.9 TWh/y is generated in 2050.

### Trajectory C

Trajectory C assumes that the quantity of waste increases around 33% between 2013 and 2050, and waste is efficiently handled through high-tech, industry-led approaches. By 2050, an overall recycling rate of 81% is achieved through post-collection sorting and treatment facilities, rather than a change in behaviour, half of which is recycled domestically and half is exported. The proportion of waste sent to landfill is reduced to just 2% by 2050. 1 TWh/y of primary energy is generated in 2050.

### Trajectory D

This trajectory assumes a national focus on waste avoidance. The overall quantity of waste decreases by 20% between 2013 and 2050. This smaller volume of waste is managed efficiently and both recycling (80% share) and energy from waste (18% share). By 2050, 25% of municipal waste is exported and 3% of waste is sent to landfill. 0.5 TWh/y of primary energy is generated in 2050.

For comparison, Denmark's use of municipal waste for energy in 2012 was 10 TWh/y. Scaled to the Irish population, that level of waste to energy is the equivalent of 8 TWh/y in Ireland.

Figure 35: TWh of primary energy produced by municipal waste per year under the 4 trajectories above

