

Data specifications

The following tables show the data points gathered during the data collection stage. The data points represent costs, employment numbers, and distances and weights related to the collection, transport, sorting, and recycling of plastic waste. Any data that do not appear in this table but are used in the model simulations can be retrieved directly from the previous study by Plastic Recyclers Europe [1]— for instance, CO₂ emission factors etc. which are not specifically related to Sweden.

Table S1. Data related to the collection, sorting, transport, and recycling of plastic waste and the deposit system in Sweden.

Category	Data point	Unit	Source
<i>Collection</i>			
Cost: Door-to-door collection	253	EUR/tonne	[1]
Cost: Bring sites	111	EUR/tonne	[1]
Cost: Recycling centres	49	EUR/tonne	[1]
Cost: Return system	1773	EUR/tonne	[2]
Employment: Door-to-door collection	40	FTE/10000t	[1]
Employment: Bring sites	21	FTE/10000t	[1]
Employment: Recycling centres	9	FTE/10000t	[1]
Employment: Return system	21	FTE/10000t	[1]
<i>Recycling</i>			
Cost of operation of recycling facilities	490	EUR/tonne	[3] [4]
Employment in recycling facilities per 10 000 tonne sorted waste	10	FTE/10000t	[5] [6]
Cost of construction for new recycling facility	24 630 542	EUR	[7]
<i>Transport</i>			
Cost of transport for recycling in Sweden	15	EUR/tonne	[1]
Cost of transport for recycling in Germany	15	EUR/tonne	[1]
Cost of transport for recycling in China	25	EUR/tonne	[8]
CO ₂ -emissions for shipping of one container to China by sea	8.4	gCO ₂ /tonne-km	[9]
<i>Sorting</i>			
Cost of operation of sorting facilities	191.1	EUR/tonne	[1]
Employment in sorting facilities	17	FTE/10000t	[1]

Note: FTE = Full-time Equivalent

Table 2. Data related to costs of end-of-life vehicles, waste electrical, and electronic equipment (WEEE), and incineration and landfilling in Sweden.

Category	Data point	Unit	Source
<i>End-of-life vehicles (ELV)</i>			
Average cost of collection of ELV	61	EUR/tonne	[10]
Average cost of dismantling or shredding of ELV	34	EUR/tonne	[11]
Average revenues from ferrous material	246	EUR/tonne	[12]
Average revenues from non-ferrous material	1306	EUR/tonne	[12]
Cost of landfilling ELV shredder waste in Sweden	79	EUR/tonne	[12]
<i>WEEE</i>			
Average cost of collection and recycling	370	EUR/tonne	[1] adjusting to inflation 2006–2012 [13]

The energy source mix for electricity production in Sweden consists of 40.47% hydro, 39.7% nuclear, 9.59% conventional thermal, 10.15% wind, and 0.09% solar [15].

Finally, the average prices of recycled plastics on the market over the period of the last three years (April 2015–April 2018) are presented in Table 4.

Table 3. Average prices of recycled plastics in the European markets [16].

Type of plastic	PET	PE-HD	PE-LD	PP	PS	PVC	Others
EUR / tonne	450	750	700	700	800	450	700

Table 4. General data on Sweden as the scope of modelling the plastic waste value chain.

Indicator	Value in Sweden	% of EU28	Reference year	Source
Population	9 995 153	1.95%	2017	[17]
Gross Domestic Product (GDP)	477 383 million EUR	3.1%	2017	[18]
GDP/capita	47 761 EUR per person	-	2017	[17][18]
Land area	447 435 km ²	9.8%	2017	[19]
Domestic Material Consumption (DMC)	224 Mt	3.4%	2014	[20]
DMC/capita	23.1 tonnes per person	-	2014	[20]
Resource productivity (GDP/DMC)	1.75 EUR/kg	-	2014	[20]
Total waste generation	167 Mt	6.7%	2014	[21]
Total plastic waste generation	301 kt	1.75%	2014	[21]
Structure of the economy	agriculture: 2% industry: 12% services: 86%	-	2014	[20]

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