Electronic Supplementary Material (ESI) for Environmental Science: Nano.
This journal is © The Royal Society of Chemistry 2017

Probabilistic assessment of ENM flows towards solid waste treatment in Europe

- Supplementary Information -

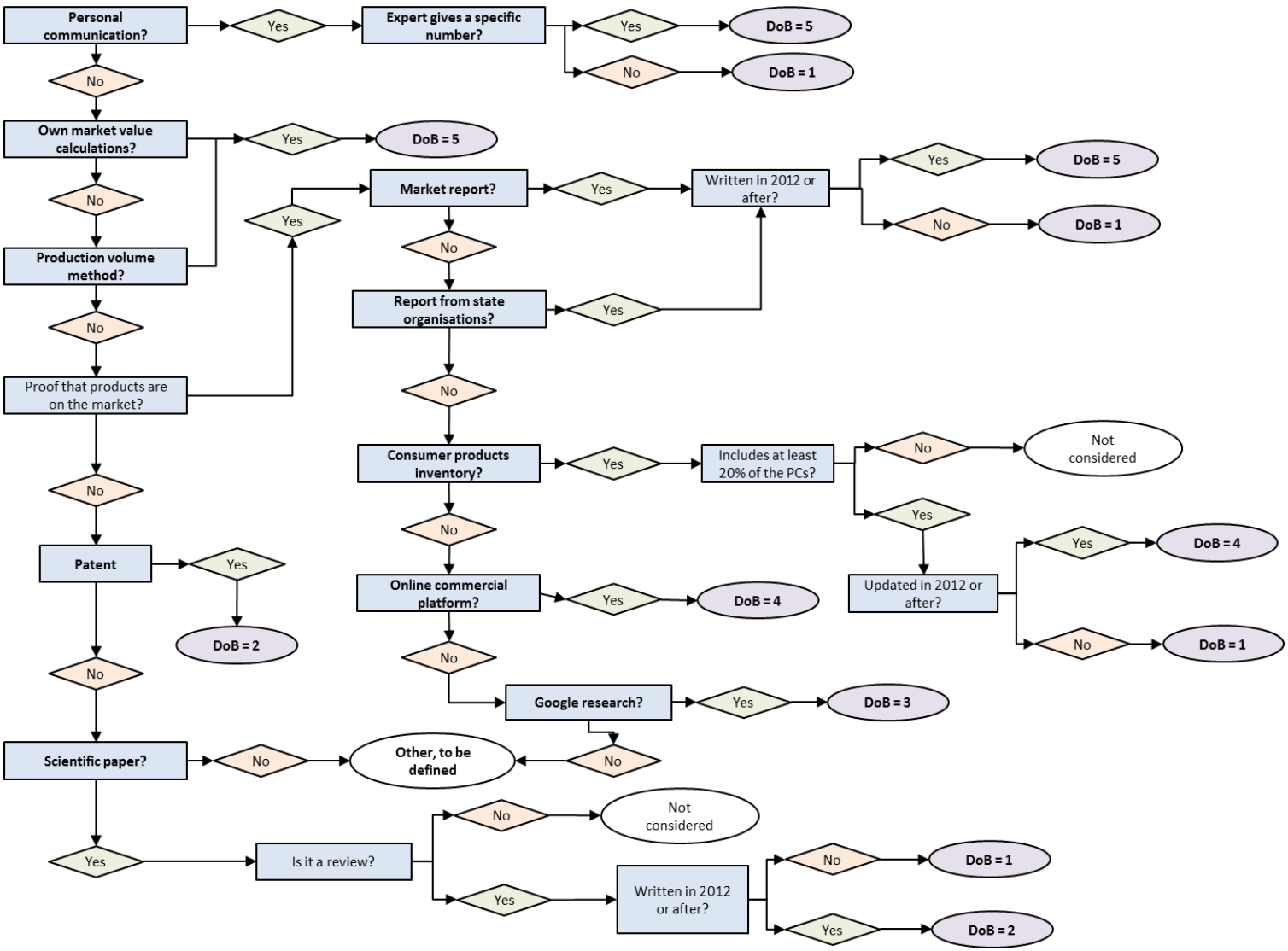

Figure S1: Decision tree used for the assessment of the quality of the references used for the allocation to product applications

	PA_1	PA_2	...	PA_m
Reference 1	**$\#PA_{1,1}$**	**$\#PA_{1,2}$**	**...**	**$\#PA_{1,m}$**
Reference 2	**$\#PA_{2,1}$**	**$\#PA_{2,2}$**	**...**	**$\#PA_{2,m}$**
...				
Reference p	**$\#PA_{p,1}$**	**$\#PA_{p,2}$**	**...**	**$\#PA_{p,m}$**

$\#PA_{k,j}$ = number of products in application j and reference k

$W_Tot_PA_1$	**$W_Tot_PA_2$**	**...**	**$W_Tot_PA_m$**	**W_Total**
$= \sum_{k=1}^{p}(\#PA_{k,1} \times DoB_k)$	$= \sum_{k=1}^{p}(\#PA_{k,2} \times DoB_k)$	...	$= \sum_{k=1}^{p}(\#PA_{k,m} \times DoB_k)$	$= \sum_{k=1}^{p}\sum_{j=1}^{m}(\#PA_{k,j} \times DoB_k)_{k,j}$

$W_Tot_PA_j$ = weighted total number of products in application j
DoB_k = degree of belief (weighting factor)of reference k

Fraction of PA	$\frac{W_Tot_PA_1}{W_Total}$	$\frac{W_Tot_PA_2}{W_Total}$	...	$\frac{W_Tot_PA_m}{W_Total}$

Figure S2: Calculation of PA distributions in each PC

Table S1: References used for the data regarding waste collection and treatment

Country	Waste category	Reference
Autria	Batteries	Elektroaltgeräte Koordinierungsstelle Austria GmbH - 2016[1]
	WEEE	BLFUW - 2015[2]
	Textiles	BLFUW - 2015[2]
	Packaging	BLFUW - 2015[2]
	Glass	BLFUW - 2015[2]
	Metals	BLFUW - 2015[2]; Eurostat[3]
	Paper	BLFUW - 2015[2]
	Plastic	BLFUW - 2015[2]
	Mixed municipal waste	BLFUW - 2015[2]
Belgium	Batteries	Perchards - 2015[4]
	WEEE	Steiger – 2014[5]; BAFU - 2015[6]
	Textiles	Coberec - 2016[7]
	Packaging	FostPlus - 2016[8]
	Glass	Eurostat[3]; de Beer - 2012[9]
	Metals	Eurostat[3]; de Beer - 2012[9]
	Paper	Eurostat[3]; de Beer - 2012[9]
	Plastic	Eurostat[3]; de Beer - 2012[9]
	Mixed municipal waste	Wille et al. - 2015[10]
Bulgaria	Batteries	Perchards - 2015[4]
	WEEE	Baldé et al. - 2015[11]; Eurostat[3]
	Textiles	Egis International - 2011[12]; Eurostat[3]
	Packaging	Ministry of Environment - 2016 (Personal communication)
	Glass	Egis International - 2011[12]; Eurostat[3]
	Metals	Egis International - 2011[12]; Eurostat[3]
	Paper	Egis International - 2011[12]; Eurostat[3]
	Plastic	Egis International - 2011[12]; Eurostat[3]
	Mixed municipal waste	Ministry of Environment and Water - 2014[13]
Croatia	Batteries	Perchards - 2015[4]
	WEEE	Hrvatska AZO - 2016a[14]
	Textiles	Stanic-Maruna and Fellner - 2012[15]; Eurostat[3]; Hrvatska AZO - 2016b[16]
	Packaging	Hrvatska AZO - 2016a[14]
	Glass	Stanic-Maruna and Fellner - 2012[15]; Eurostat[3]; Hrvatska AZO - 2016b[16]
	Metals	Stanic-Maruna and Fellner - 2012[15]; Eurostat[3]; Hrvatska AZO - 2016b[16]
	Paper	Stanic-Maruna and Fellner - 2012[15]; Eurostat[3]; Hrvatska AZO - 2016b[16]
	Plastic	Stanic-Maruna and Fellner - 2012[15]; Eurostat[3]; Hrvatska AZO - 2016b[16]
	Mixed municipal waste	Hrvatska AZO - 2016b[16]
Cyprus	Batteries	Perchards - 2015[4]
	WEEE	Hrvatska AZO - 2016a[14]
	Textiles	Stanic-Maruna and Fellner - 2012[15]; Eurostat[3]; Hrvatska AZO - 2016b[16]
	Packaging	Green Dot - 2016[17]
	Glass	Zorpas et al - 2015[18]; Eurostat[3]
	Metals	Zorpas et al - 2015[18]; Eurostat[3]
	Paper	Zorpas et al - 2015[18]; Eurostat[3]
	Plastic	Static-Maruna and Fellner - 2012[15]; Eurostat[3]; Hrvatska AZO - 2016b[16]
	Mixed municipal waste	Department of Environment (Personal communication)

Table S1 (continued): References used for the data regarding waste collection and treatment

Country	Waste category	Reference
Czech Republic	Batteries	Perchards - 2015[4]
	WEEE	MAPAMA - 2016[19]; Eurostat[3]
	Textiles	MAPAMA - 2016[19]; Eurostat[3]
	Packaging	MAPAMA - 2016[19]
	Glass	MAPAMA - 2016[19]; Eurostat[3]; AFESD - 2015[20]
	Metals	MAPAMA - 2016[19]; Eurostat[3]
	Paper	MAPAMA - 2016[19]; Eurostat[3]; AFESD - 2015[20]
	Plastic	MAPAMA - 2016[19]; Eurostat[3]
	Mixed municipal waste	Ministry of the Environment - 2014[21]
Denmark	Batteries	Perchards - 2015[4]
	WEEE	Toft et al - 2016[22]
	Textiles	Tojo et al - 2012[23]
	Packaging	Petersen et al - 2014[24]; Toft et al - 2016[22]
	Glass	Petersen et al - 2014[24]; Toft et al - 2016[22]
	Metals	Petersen et al - 2014[24]; Toft et al - 2016[22]
	Paper	Petersen et al - 2014[24]; Toft et al - 2016[22]
	Plastic	Petersen et al - 2014[24]; Toft et al - 2016[22]
	Mixed municipal waste	Eurostat[3]
Estonia	Batteries	Perchards - 2015[4]
	WEEE	Keskkonnaagentuur - 2016[25]; Mattson - 2016[26]; RECO Baltic 21 Tech - 2012[27]
	Textiles	RECO Baltic 21 Tech - 2012[27]; Eurostat[3]
	Packaging	Estonian Institute for Sustainable Development & SEI Tallin - 2014[28]; Mattson - 2016[26]
	Glass	Mattson - 2016[26]; RECO Baltic 21 Tech - 2012[27]
	Metals	RECO Baltic 21 Tech - 2012[27]; Eurostat[3]
	Paper	Mattson - 2016[26]; RECO Baltic 21 Tech - 2012[27]
	Plastic	Mattson - 2016[26]; RECO Baltic 21 Tech - 2012[27]
	Mixed municipal waste	Eurostat[3]
Finland	Batteries	Perchards - 2015[4]
	WEEE	Liikanen et al - 2016[29]; Statistics Finland - 2015[30]; Seyring et al - 2015[31]
	Textiles	Tojo et al - 2012[23]
	Packaging	ymparisto.fi[32]
	Glass	Liikanen et al - 2016[29]; Statistics Finland - 2015[30]; Eurostat[3]
	Metals	Liikanen et al - 2016[29]; Statistics Finland - 2015[30]; Eurostat[3]
	Paper	Liikanen et al - 2016[29]; Statistics Finland - 2015[30]
	Plastic	Liikanen et al - 2016[29]; Statistics Finland - 2015[30]
	Mixed municipal waste	Statistics Finland - 2015[30]
France	Batteries	Perchards - 2015[4]
	WEEE	ADEME - 2010[33], 2015a[34]; Eurostat[3]
	Textiles	ADEME - 2010[33], 2015b[35]; Eurostat[3]
	Packaging	Eco-Emballages and Adelphe - 2015[36]
	Glass	ADEME - 2010[33]; Eurostat[3]
	Metals	ADEME - 2010[33]; Eurostat[3]
	Paper	ADEME - 2010[33]; Eurostat[3]
	Plastic	ADEME - 2010[33]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]

Table S1 (continued): References used for the data regarding waste collection and treatment

Country	Waste category	Reference
Germany	Batteries	Perchards - 2015[4]
	WEEE	Ear - 2016[37]; Eurostat[3]
	Textiles	FTR - 2015[38]
	Packaging	Schüler et al - 2015[39]; Eurostat[3]; Toft et al - 2016[22]
	Glass	Plastic Zero - 2014[40]; Eurostat[3]
	Metals	Plastic Zero - 2014[40]; Eurostat[3]
	Paper	Plastic Zero - 2014[40]; Eurostat[3]
	Plastic	Plastic Zero - 2014[40]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Greece	Batteries	Perchards - 2015[4]
	WEEE	Hrvatska AZO - 2016a[14]
	Textiles	Papagiorgou et al - 2009[41]; Eurostat[3]
	Packaging	Kalogirou and Sakalis - 2016[42]
	Glass	Papagiorgou et al - 2009[41]; Eurostat[3]
	Metals	Papagiorgou et al - 2009[41]; Eurostat[3]
	Paper	Papagiorgou et al - 2009[41]; Eurostat[3]
	Plastic	Papagiorgou et al - 2009[41]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Hungary	Batteries	Perchards - 2015[4]
	WEEE	MAPAMA - 2016[19]; Eurostat[3]
	Textiles	MAPAMA - 2016[19]; Eurostat[3]
	Packaging	MAPAMA - 2016[19]
	Glass	MAPAMA - 2016[19]; Eurostat[3]
	Metals	MAPAMA - 2016[19]; Eurostat[3]
	Paper	MAPAMA - 2016[19]; Eurostat[3]
	Plastic	MAPAMA - 2016[19]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Ireland	Batteries	Perchards - 2015[4]
	WEEE	McCoole et al - 2013[43]; WEEE Ireland - 2016[44]; EPA - 2014[45]
	Textiles	McCoole et al - 2013[43]; EPA - 2014[45]; Eurostat[3]
	Packaging	Personal communication from EPA
	Glass	McCoole et al - 2013[43]; Eurostat[3]; EPA - 2014[45]
	Metals	McCoole et al - 2013[43]; Eurostat[3]; EPA - 2014[45]
	Paper	McCoole et al - 2013[43]; Eurostat[3]; EPA - 2014[45]
	Plastic	McCoole et al - 2013[43]; Eurostat[3]; EPA - 2014[45]
	Mixed municipal waste	EPA - 2014[45]
Italy	Batteries	Perchards - 2015[4]
	WEEE	ISPRA - 2015[46]; Di Maria et al - 2015[47]
	Textiles	ISPRA - 2015[46]; Di Maria et al - 2015[47]
	Packaging	ISPRA - 2015[46]
	Glass	ISPRA - 2015[46]; Di Maria et al - 2015[47]
	Metals	ISPRA - 2015[46]; Di Maria et al - 2015; Eurostat[3]
	Paper	ISPRA - 2015[46]; Di Maria et al - 2015[47]
	Plastic	ISPRA - 2015[46]; Di Maria et al - 2015[47]
	Mixed municipal waste	Eurostat[3]

Table S1 (continued): References used for the data regarding waste collection and treatment

Country	Waste category	Reference
Latvia	Batteries	Perchards - 2015[4]
	WEEE	Hrvatska AZO - 2016a[14]
	Textiles	Teibe et al - 2013[48]; Eurostat[3]
	Packaging	Hrvatska AZO - 2016a[14]
	Glass	Teibe et al - 2013[48]; Eurostat[3]
	Metals	Teibe et al - 2013[48]; Eurostat[3]
	Paper	Teibe et al - 2013[48]; Eurostat[3]
	Plastic	Teibe et al - 2013[48]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Lithuania	Batteries	Perchards - 2015[4]
	WEEE	MAPAMA - 2016[19]; Eurostat[3]
	Textiles	Teibe et al - 2013[48]; Eurostat[3]
	Packaging	Personal communication from Inga Latveliene, EPA; MAPAMA - 2016[19]; Eurostat[3]
	Glass	Teibe et al - 2013[48]; Eurostat[3]
	Metals	Teibe et al - 2013[48]; Eurostat[3]
	Paper	Teibe et al - 2013[48]; Eurostat[3]
	Plastic	Teibe et al - 2013[48]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Luxembourg	Batteries	Perchards - 2015[4]
	WEEE	MDI - 2015[49]; MDI - 2014[50]; Eurostat[3]
	Textiles	Administration de l'Environnement[51]; MDI - 2014[50]; Eurostat[3]
	Packaging	Administration de l'Environnement[51]
	Glass	Administration de l'Environnement[51]; Eurostat[3]; MDI - 2014[50]
	Metals	MDI - 2014[50]; Eurostat[3]
	Paper	Administration de l'Environnement[51]; Eurostat[3]; MDI - 2014[50]
	Plastic	Administration de l'Environnement[51]; Eurostat[3]; MDI - 2014[50]
	Mixed municipal waste	Eurostat[3]
Malta	Batteries	Perchards - 2015[4]
	WEEE	RECO Baltic 21 Tech - 2012[27]; Eurostat[3]; Personal communication from the Environment and Resources Authority
	Textiles	Eurostat[3]; Personal communication from the Environment and Resources Authority
	Packaging	Eurostat[3]; Personal communication from the Environment and Resources Authority
	Glass	Eurostat[3]; Zorpas et al - 2015[18]
	Metals	Eurostat[3]; Zorpas et al - 2015[18]
	Paper	Eurostat[3]; Zorpas et al - 2015[18]
	Plastic	Teibe et al – 2013[48]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Netherlands	Batteries	Perchards - 2015[4]
	WEEE	Huisman et al - 2012[52]; Rijkswaterstaat - 2016[53]
	Textiles	van de Wiel - 2013[54]
	Packaging	Afvalfonds Verpakkingen - 2016[55]; Rijkswaterstaat - 2016[53]; Eurostat[3]
	Glass	Rijkswaterstaat - 2016[53]; Eurostat[3]
	Metals	Rijkswaterstaat - 2016[53]; Eurostat[3]
	Paper	Rijkswaterstaat - 2016[53]; Eurostat[3]
	Plastic	Rijkswaterstaat - 2016[53]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]

Table S1 (continued): References used for the data regarding waste collection and treatment

Country	Waste category	Reference
Norway	Batteries	Perchards - 2015[4]
	WEEE	Norwegian Environment Agency - 2013[56]; Ellyin - 2012[57]; Eurostat[3]
	Textiles	Tojo et al - 2012[23]
	Packaging	Petersen et al - 2014[24]; Toft et al - 2016[22]
	Glass	Eurostat[3]; Petersen et al - 2014[24]
	Metals	Eurostat[3]; Petersen et al - 2014[24]
	Paper	Eurostat[3]; Petersen et al – 2014[24]
	Plastic	Eurostat[3]; Petersen et al - 2014[24]
	Mixed municipal waste	Eurostat[3]
Poland	Batteries	Perchards - 2015[4]
	WEEE	Personal communication from the Executive Environmental Agency of Bulgaria
	Textiles	Gorska et al - 2015[58]; den Boer et al - 2010[59]; Eurostat[3]
	Packaging	Ministry of Environment - 2016 (Personal communication)
	Glass	Eurostat[3]; den Boer et al - 2010[59]
	Metals	Eurostat[3]; den Boer et al - 2010[59]
	Paper	Eurostat[3]; den Boer et al - 2010[59]
	Plastic	Eurostat[3]; den Boer et al - 2010[59]
	Mixed municipal waste	Eurostat[3]
Portugal	Batteries	Perchards - 2015[4]
	WEEE	Eurostat[3]; MAPAMA - 2016[19]
	Textiles	Eurostat[3]
	Packaging	MAPAMA - 2016[19]
	Glass	Magrinho and Semiao - 2008[60]; Eurostat[3]
	Metals	Magrinho and Semiao - 2008[60]; Eurostat[3]
	Paper	Magrinho and Semiao - 2008[60]; Eurostat[3]
	Plastic	Magrinho and Semiao - 2008[60]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Romania	Batteries	Perchards - 2015[4]
	WEEE	Magalini et al - 2015[61]; Ecotic - 2015[62]
	Textiles	Ciuta et al - 2015[63]; Eurostat[3]
	Packaging	Personal communication from the Environment and Resources Authority
	Glass	Ciuta et al - 2015[63]; Eurostat[3]
	Metals	Ciuta et al - 2015[63]; Eurostat[3]
	Paper	Ciuta et al - 2015[63]; Eurostat[3]
	Plastic	Ciuta et al - 2015[63]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Slovakia	Batteries	Perchards - 2015[4]
	WEEE	Hrvatska AZO - 2016a[14]
	Textiles	Papagiorgou et al - 2009[41]; Eurostat[3]
	Packaging	Kalogirou and Sakalis - 2016[42]
	Glass	Papagiorgou et al - 2009[41]; Eurostat[3]
	Metals	Papagiorgou et al - 2009[41]; Eurostat[3]
	Paper	Papagiorgou et al - 2009[41]; Eurostat[3]
	Plastic	Papagiorgou et al - 2009[41]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]

Table S1 (continued): References used for the data regarding waste collection and treatment

Country	Waste category	Reference
Slovenia	Batteries	Perchards - 2015[4]
	WEEE	Di Maria et al - 2015[47]; Zitnik and Vidic - 2015[64]; Eurostat[3]
	Textiles	Di Maria et al - 2015[47]; Eurostat[3]
	Packaging	ISPRA - 2015[46]
	Glass	Di Maria et al - 2015[47]; Eurostat[3]
	Metals	Di Maria et al - 2015[47]; Eurostat[3]
	Paper	Di Maria et al - 2015[47]; Eurostat[3]
	Plastic	Di Maria et al - 2015[47]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Spain	Batteries	Perchards - 2015[4]
	WEEE	MAPAMA - 2016[19]; Eurostat[3]
	Textiles	MAPAMA - 2016[19]; Eurostat[3]
	Packaging	MAPAMA - 2016[19]
	Glass	MAPAMA - 2016[19]; Eurostat[3]
	Metals	MAPAMA - 2016[19]; Eurostat[3]
	Paper	MAPAMA - 2016[19]; Eurostat[3]
	Plastic	MAPAMA - 2016[19]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Sweden	Batteries	Perchards - 2015[4]
	WEEE	Steiger – 2014[5]; BAFU - 2015[6]
	Textiles	Tojo et al - 2012[23]
	Packaging	BAFU - 2015[6]
	Glass	BAFU - 2015[6]; Eurostat[3]
	Metals	BAFU - 2015[6]; Eurostat[3]
	Paper	BAFU - 2015[6]; Eurostat[3]
	Plastic	BAFU - 2015[6]; Eurostat[3]
	Mixed municipal waste	Eurostat[3]
Switzerland	Batteries	Perchards - 2015[4]
	WEEE	Steiger – 2014[5]; BAFU - 2015[6]
	Textiles	Steiger – 2014[5]; BAFU - 2015[6]
	Packaging	BAFU - 2015[6]
	Glass	BAFU - 2015[6]
	Metals	BAFU - 2015[6]
	Paper	BAFU - 2015[6]
	Plastic	BAFU - 2015[6]
	Mixed municipal waste	OFEV - 2016[65]
United Kingdom	Batteries	Perchards - 2015[4]
	WEEE	Personal communication from the EPA; Eurostat[3]; Personal communication from D. Turner, Empa
	Textiles	Thompson and Hitchen - 2015[66]; Eurostat[3]; Personal communication from D. Turner, Empa
	Packaging	DEFRA - 2015[67]
	Glass	Eurostat[3]; Personal communication from D. Turner, Empa
	Metals	Eurostat[3]; Personal communication from D. Turner, Empa
	Paper	Eurostat[3]; Personal communication from D. Turner, Empa
	Plastic	Eurostat[3]; Personal communication from D. Turner, Empa
	Mixed municipal waste	Eurostat[3]

Table S1 (continued): References used for the data regarding waste collection and treatment

List of references:

(1) Elektroaltgeräte Kordinierungsstelle Austria GmbH. *Tätigkeitsbericht 2015*; Wien, 2016; p 93.

(2) Bundesministerium für Land- und Fortwirtschaft, Umwelt und Wasserwirtschaft. *Die Bestandsaufnahme der Abfallwirtschaft in Österreich Statusbericht 2015*; Wien, 2015; p 92.

(3) European Commission. Waste Generation and Treatment http://ec.europa.eu/eurostat/web/environment/waste/database (accessed Feb 15, 2017).

(4) Perchards; SagisEPR.com. *The collection of waste portable batteries in Europe in view of the achievability of the collection targets set by Batteries Directive 2006/66/EC*; European Portable Battery Association (EPBA), 2015; p 35.

(5) Steiger, U. *Erhebung der Kehrichtzusammensetzung 2012*; Bundesamt für Umwelt (BAFU), 2014; p 63.

(6) Bundesamt für Umwelt BAFU. *Abfallmengen und Recycling 2014 im Überblick*; Bern, Switzerland, 2015; p 1.

(7) Coberec. *Récupération des textiles - Rapport 2015*; 2016; p 1.

(8) FostPlus. *Annual Report 2015*; Brussels, Belgium, 2016; p 24.

(9) de Beer, H. *Gestion des déchets ménagers à Bruxelles et en Wallonie: Etat des lieux et enjeux*; Etopia, 2012; p 17.

(10) Wille, D.; Vervaet, M.; Andries, A.; Segers, N.; Van Hasselt, D.; Smeets, K. *Inventarisatie huishoudelijke afvalstoffen 2014*; OVAM: Mechelen, The Netherlands, 2015; p 67.

(11) Baldé, C. P.; Wang, F.; Kuehr, R.; Huisman, J. *The global e-waste monitor - 2014*; United Nations University, IAS - SCYCLE: Bonn, Germany, 2015; p 80.

(12) Egis International. *Sofia Waste Phase II - MBT Option Analysis - First Interim Report*; 2011; p 123.

(13) Ministry of Environment and Water. *National Waste Management Plan 2014-2020*; Sofia, Bulgaria, 2014; p 197.

(14) Hrvatska agencija za okolis i prirodu. *Pregled podataka za posebne kategorije otpada za razdoblje do 2014. Godine: Ambalazni otpad, Otpadna motorna i jestiva ulja, Elektricni i elektronicki otpad, Otpadne baterije i akumulatori*; Zagreb, Croatia, 2016; p 25.

(15) Stanic-Maruna, I.; Fellner, J. Solid waste management in Croatia in response to the European Landfill Directive. *Waste Manag. Res.* **2012**, *0*, 1–14.

(16) Hrvatska agencija za okolis i prirodu. *Izvjescé o komunalnom otpadu za 2014. godinu*; NN br. 94/13; Zagreb, Croatia, 2016; p 309.

(17) Green Dot. *Annual Report 2015*; 2016; p 94.

(18) Zorpas, A. A.; Lasaridi, K.; Voukkali, I.; Loizia, P.; Chroni, C. Household waste compositional analysis variation from insular communities in the framework of waste prevention strategy plans. *Waste Manag.* **2015**, *38*, 3–11.

(19) Ministerio de agricultura y pesca alimentación y medio ambiente. *Anuario de Estadística 2015*; Madrid, Spain, 2016; p 1047.

(20) Agriculture, Forestry and Environmental Statistics Department. *Generation, recovery and dispoal of waste*; Prague, Czech Republic, 2015; p 42.

(21) Ministry of the Environment. *Waste Management Plan of the Czech Republic for the period 2015-2024*; Prague, Czech Republic, 2014; p 189.

(22) Toft, R.; Fischer, C.; Aasted Bojesen, N. *Waste Statistics 2014*; Ministry of Environment and Food of Denmark, 2016; p 58.

(23) Tojo, N.; Kogg, B.; Kiorboe, N.; Kjaer, B.; Aalto, K. *Prevention of Textile Waste - Material flows of textiles in three Nordic countries and suggestions on policy instruments*; TemaNord 2012:545; Nordic Council of Ministers, 2012; p 124.

(24) Petersen, C.; Kaysen, O.; Manokaran, S.; Tonning, K. *Kortlaegning af dagrenovation i Danmark - Med fokus pa etageboliger og madspild*; Miljostyrelsen, 2014; p 74.

(25) Keskkonnaagentuur. Waste from Estonia https://jats.keskkonnainfo.ee/main.php?public=1 (accessed Feb 14, 2017).

(26) Mattson, T. Municipal waste removal is successfully organised, sorting needs improvement http://www.riigikontroll.ee/tabid/168/amid/557/ItemId/942/language/en-US/Default.aspx (accessed Feb 14, 2017).
(27) RECO Baltic 21 Tech. *National Waste Management Review - Estonia, Latvia, Lithuania, Poland*; 2012; p 96.
(28) Estonian Institute for Sustainable Development; Stockholm Environment Institute Tallinn Centre (SEI Tallinn). *Improving the recycling system of municipal waste in Tallinn based on the examples of best practices*; 2014; p 67.
(29) Liikanen, M.; Sahimaa, O.; Hupponen, M.; Havukainen, J.; Sorvari, J.; Horttanainen, M. Updating and testing of a Finnish method for mixed municipal solid waste composition studies. *Waste Manag.* **2016**, *52*, 25–33.
(30) Statistics Finland. *Waste Statistics 2014 - Municipal waste*; 2015; p 5.
(31) Seyring, N.; Kling, M.; Weissenbacher, J.; Hestin, M.; Lecerf, L.; Magalini, F.; Sinha Khetriwal, D.; Kuehr, R. *Study on WEEE recovery targets, preparation for re-use targets and on the method for calculation of the recovery targets - Final Report*; European Commission (EC), 2015; p 136.
(32) ymparisto.fi. Pakkausjätetilastoja vuosilta 2003-2014, materiaalit yhteensä. 2016.
(33) ADEME. *La composition des ordures ménagères et assimilées en France*; ADEME, 2010; p 31.
(34) ADEME. *Equipements électriques et électroniques - Données 2014*; Angers, France, 2015; p 16.
(35) ADEME. *Textiles d'habillement, linge de maison et chaussures des ménages - Données 2014*; Angers, France, 2015; p 13.
(36) Eco-Emballages; Adelphe. *Rapport d'activité 2014*; 2015; p 112.
(37) Stiftung Elektro-altgeräte register. Jahres-Statistik-Mitteilung https://www.stiftung-ear.de/en/service/kennzahlen/jahres-statistik-mitteilung/ (accessed Feb 14, 2017).
(38) Fachverband Textilrecycling. *Konsum, Bedarf und Wiederverwendung von Bekleidung und Textilien in Deutschland*; Bundesverband Sekundärrohstoffe und Entsorgung e.V., 2015; p 68.
(39) Schüler, K. *Aufkommen und Verwertung von Verpackungsabfällen in Deutschland im Jahr 2013*; UBA-FB 002234; Umweltbundesamtes: Dessau-Rosslau, 2015; p 177.
(40) Plastic ZERO - Public Private Cooperations for Avoiding Plastic as a Waste. *Review of plastic waste in municipal waste stream - Germany*; 2014; p 13.
(41) Papageorgiou, A.; Karagiannidis, A.; Barton, J. R.; Kalogirou, E. Municipal solid waste management scenarios for Attica and their greenhouse gas emission impact. *Waste Manag. Res.* **2009**, *27*, 928–937.
(42) Kalogirou, E.; Sakalis, A. Overview of the Waste Management Situation and Planning in Greece. *Waste Manag.* **2016**, *6*, 107–116.
(43) McCoole, F.; Kurz, I.; McDonagh, M.; O'Neill, D.; Derham, J. *National Waste Report for 2011*; Environmental Protection Agency of Ireland, 2013; p 103.
(44) WEEE Ireland. *Annual Environmental Report 2014*; Dublin, Ireland, 2015; p 88.
(45) Environmental Protection Agency. Bulletin 3: Residual waste treatment trends 2009 to 2013. 2014.
(46) Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA). *Rapporto Rifiuti Urbani - Edizione 2015*; 2015; p 585.
(47) Di Maria, F.; Micale, C.; Morettini, E.; Sisani, L.; Damiano, R. Improvement of the management of residual waste in areas without thermal treatment facilities: A life cycle analysis of an Italian management district. *Waste Manag.* **2015**, *44*, 206–215.
(48) Teibe, I.; Bendere, R.; Arina, D. Latvian waste management modelling in view of environmental impact reduction. *Latv. J. Phys. Tech. Sci.* **2013**, No. 6, 36–47.
(49) Ministère du Développement durable et des Infrastructures. *Berichtswesen 2013 zur Bewirtschaftung von Elektround Elektronik-Altgeräten im Großherzogtum Luxemburg*; 2015; p 14.
(50) Ministère du Développement durable et des Infrastructures. Restabfallanalyse 2013/14 Ausgewählte Ergebnisse. 2014.

(51) Administration de l'Environnement. Déchets recyclables récupérés (en tonnes) 1984-2014 http://www.statistiques.public.lu/stat/TableViewer/tableView.aspx?ReportId=13940&IF_Language=fra&MainTheme=1&FldrName=3&RFPath=65 (accessed Feb 14, 2017).
(52) Huisman, J.; van der Maesen, M.; Eijsbouts, R. J. J.; Wang, F.; Baldé, C. P.; Wielenga, C. A. *The Dutch WEEE Flows*; United Nations University, ISP - SCYCLE: Bonn, Germany, 2012; p 46.
(53) Rijkswaterstaat. *Samenstelling van het huishoudelijk restafval, sorteeranalyses 2015 - Gemiddelde driejaarlijkse samenstelling 2014*; Utrecht, The Netherlands, 2016; p 46.
(54) van de Wiel, H. *Giving old clothes a second life*; Dutch Waste Management Association, 2013; p 3.
(55) Afvalfonds Verpakkingen. *Monitoring Verpakkingen - Resultaten inzameling en recycling 2015*; 2016; p 60.
(56) The Norwegian Environment Agency. Waste electrical and electronic equipment http://www.environment.no/topics/waste/waste-electrical-and-electronic-equipment/ (accessed Feb 14, 2017).
(57) Ellyin, C. *Small scale waste-to-energy technologies*; Ph.D. Dissertation; Columbia University, 2012; p 65.
(58) Górska, A.; Karczewska, K.; Kielczykowska, A.; Kowaluk, R.; Lizuraj, M.; Pawlowska, T.; Rudnicka, M.; Ruman, J.; Stefaniak, K.; Sulik, J.; et al. *Environment 2015*; CSO, Regional and Environmental Surveys Department: Varsaw, Poland, 2015; p 565.
(59) den Boer, E.; Jedrczak, A.; Kowalski, Z.; Kulcazycka, J.; Szpadt, R. A review of municipal solid waste composition and quantities in Poland. *Waste Manag.* **2010**, *30*, 369–377.
(60) Magrinho, A.; Semiao, V. Estimation of residual MSW heating value as a function of waste component recycling. *Waste Manag.* **2008**, *28*, 2675–2683.
(61) Magalini, F.; Baldé, K.; Habib, H. *Quantifying Waste of Electric and Electronic Equipment in Romania*; United Nations University, 2015; p 42.
(62) Ecotic. *Year in Review 2014*; 2015; p 32.
(63) Ciuta, S.; Apostol, T.; Rusu, V. Urban and Rural MSW Stream Characterization for Separate Collection Improvement. *Sustainability* **2015**, *7*, 916–931.
(64) Zitnik, M.; Vidic, T. *In 2013, 69% of packaging waste was recycled*; Statistical Office of the Republic of Slovenia: Ljubljana, Slovenia, 2015; p 3.
(65) Office fédéral de l'environnement (OFEV). Statistique des déchets spéciaux 2012 - Déchets suisses traités sur le territoire national. February 26, 2016.
(66) Thompson, L.; Hitchen, D. *Recycling Grade Textiles - Collection Demonstration Projects*; WRAP, 2015; p 23.
(67) Department for Environment, Food and Rural Affairs (DEFRA). *Digest of Waste and Resource Statistics - 2015 Edition*; 2015; p 84.

Table S2: Allocation of CNT product categories to product applications and waste streams. SW: solid waste; WEEE: waste electrical and electronic equipment; CDW: construction and demolition waste.

Product category			**Application**		**Waste stream**
Name	***Share$_{PCi}$***	**Fraction in SW after use**	**Name**	***Share$_{PAi}$***	
Composite	0.84	99%	Sporting goods, ballistic jacket, CD mat	0.78	Mixed municipal waste
			EEE, Wire	0.11	Total WEEE
			Textile	0.07	Textile
			Steel pipes	0.02	Total CDW
			Automotive	0.01	Total ELV
			Wind turbine	0.01	Wind turbine
Energy	0.09	100%	Fuel cells, Hydrogen storage, Li-ion batteries, Supercapacitors	0.71	Batteries & Accumulators
			Sensors	0.29	WEEE
Electronics & Appliances	0.03	100%	Headphones, TV	1.00	WEEE
Paints	0.01	99%	Construction, concrete, wood,…	0.34	Total CDW
			EEE, LED, Solar cells	0.26	Total WEEE
			Vehicles	0.18	ELV
			Marine metal	0.10	Boat
			Textile	0.06	Textile
			Packaging	0.05	Mixed municipal waste
Automotive	0.01	100%	Vehicles	1.00	ELV
Aerospace	0.01	100%	Aerospace	1.00	Aerospace
Sensor	0.00	100%	Total WEEE	1.00	Total WEEE
Textiles	0.00	97%	Textiles	1.00	Textiles

Table S3: Allocation of nano-TiO_2 product categories to product applications and waste streams. SW: solid waste; WEEE: waste electrical and electronic equipment; CDW: construction and demolition waste; LHA: Large household appliances.

Product category			**Application**		**Waste stream**
Name	***$Share_{PCi}$***	**Fraction in SW after use**	**Name**	***$Share_{PAi}$***	
Cosmetics	55.6%	0.05	Packaging	1.00	Plastic packaging waste
Paints	8.4%	0.99	Construction	0.87	CDW
			Automotive	0.08	ELV
			Packaging	0.05	Mixed municipal
Electronics	6.5%	0.70	Electronics	0.48	WEEE
			LHA	0.35	LHA
			Mixed municipal	0.17	Mixed municipal waste
Cleaning agents	5.8%	0.05	Packaging	1.00	Plastic packaging waste
Filters	5.5%	0.70	Air conditioners	1.00	LHA
Plastics	3.4%	0.97	Plastic	1.00	Plastic waste
Coatings	3.5%	0.65	Construction	0.46	CDW
			Automotive	0.24	ELV
			Textiles	0.07	Textile waste
			Packaging	0.05	Mixed municipal waste
			Electronics	0.05	WEEE
			LHA	0.04	LHA
			Water treatment	0.04	Mixed municipal waste
			Food	0.03	Mixed municipal waste
			Airplanes	0.01	Airplanes
			Medical instruments	0.004	Medical waste
Glass & Ceramics	1.6%	0.65	Construction	0.50	CDW
			Air purifier	0.50	LHA
Sport goods	1.4%	0.96	Mixed municipal	0.96	Mixed municipal waste
			Textiles	0.04	Textile waste
WWTP	6.6%	0.02	Packaging	1.00	Packaging waste
Batteries	0.4%	0.10	Batteries & Accumulators	1.00	Batteries & Accumulators
Food	0.4%	0.10	Mixed municipal	0.99	Mixed municipal waste
			Packaging	0.01	Packaging waste
Textiles	0.3%	0.97	Textiles	1.00	Textile waste
Light bulbs	0.2%	1.00	Lighting equipment	1.00	WEEE
Spray	0.2%	0.05	Mixed municipal	1.00	Mixed municipal waste
Metals	0.1%	0.95	Construction	0.50	CDW
			Automotive	0.50	ELV
Cement	0.1%	0.99	Concrete	1.00	CDW
Paper	0.1%	1.00	Paper & Cardboard	1.00	Paper & cardboard

Table S4: Allocation of nano-ZnO product categories to product applications and waste streams. SW: solid waste; WEEE: waste electrical and electronic equipment; CDW: construction and demolition waste; LHA: Large household appliances.

Product category			**Application**		**Waste stream**
Name	***$Share_{PCi}$***	**Fraction in SW after use**	**Name**	***$Share_{PAi}$***	
Cosmetics	0.83	5%	Packaging	1	Packaging waste
Paints	0.14	65%	Construction	1	CDW
Plastics	0.02	20%	Residual and bulky waste	1	Mixed municipal waste
Glass	0.007	65%	Light equipment Construction	0.5 0.5	WEEE CDW
Electronics	0.002	7%	WEEE	1	WEEE
Cleaning agents	0.0015	5%	Packaging	1	Packaging waste
Filters	0.001	70%	Mixed municipal	1	Mixed municipal waste
Paper	0.0002	100%	Paper & Cardboard	1	Paper & Cardboard
Textiles	0.0001	40%	Textiles	1	Textile waste
Wood	0.0001	70%	Construction	1	CDW
Food	0.00005	10%	Packaging	1	Packaging waste
Metals	0.00005	95%	Metals	1	Metal waste

Table S5: Municipal waste management in Europe in 2013 (adapted from Eurostat)

	Landfilling		Total incineration		Material recycling	
	Tonnes	%	Tonnes	%	Tonnes	%
Belgium	46	1%	2'189	56%	1'672	43%
Bulgaria	2'167	72%	49	2%	787	26%
Czech Republic	1'815	58%	631	20%	686	22%
Denmark	71	2%	2'315	65%	1'154	33%
Germany	684	2%	17'255	42%	23'091	56%
Estonia	53	17%	214	68%	49	16%
Ireland	1'028	45%	427	19%	829	36%
Greece	4'507	84%	0	0%	869	16%
Spain	11'801	67%	2'492	14%	3'284	19%
France	8'777	31%	12'099	43%	7'320	26%
Croatia	1'413	86%	1	0%	228	14%
Italy	10'914	45%	5'970	25%	7'335	30%
Cyprus	423	86%	0	0%	70	14%
Latvia	521	89%	0	0%	66	11%
Lithuania	798	69%	92	8%	261	23%
Luxembourg	61	22%	119	43%	95	35%
Hungary	2'415	68%	336	9%	799	23%
Malta	196	91%	1	0%	19	9%
Netherlands	131	2%	4'305	66%	2'111	32%
Austria	199	6%	1'716	55%	1'202	39%
Poland	5'979	73%	766	9%	1'499	18%
Portugal	2'320	58%	1'091	27%	594	15%
Romania	3'503	92%	97	3%	214	6%
Slovenia	224	48%	4	1%	239	51%
Slovakia	1'152	80%	174	12%	108	8%
Finland	672	29%	1'137	49%	510	22%
Sweden	28	1%	2'192	60%	1'443	39%
United Kingdom	10'516	41%	6'510	26%	8'468	33%
Norway	52	2%	1'446	69%	590	28%
Switzerland	0	0%	2'798	59%	1'919	41%

Table S6: Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in Austria					**Flows of Ag in Belgium**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.25	0.34	0.34	0.43	**45.4%**	0.31	0.40	0.42	0.54	**45.3%**
Air	0.02	0.02	0.03	0.03	**3.4%**	0.02	0.03	0.03	0.04	**3.4%**
Surface water	0.00	0.01	0.01	0.01	**0.9%**	0.01	0.01	0.01	0.01	**1.0%**
Soil	0.00	0.01	0.01	0.01	**0.8%**	0.01	0.01	0.01	0.01	**0.8%**
Landfill	0.01	0.02	0.02	0.02	**2.5%**	0.01	0.01	0.01	0.02	**1.2%**
Incineration	0.07	0.09	0.10	0.12	**13.0%**	0.08	0.10	0.11	0.14	**11.4%**
Recycling	0.19	0.25	0.26	0.32	**34.0%**	0.25	0.32	0.34	0.44	**37.0%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of Ag in Bulgaria					**Flows of Ag in Croatia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.08	0.11	0.11	0.14	**45.3%**	0.06	0.08	0.08	0.10	**45.3%**
Air	0.01	0.01	0.01	0.01	**3.4%**	0.00	0.01	0.01	0.01	**3.4%**
Surface water	0.00	0.00	0.00	0.00	**1.0%**	0.00	0.00	0.00	0.00	**1.0%**
Soil	0.00	0.00	0.00	0.00	**0.8%**	0.00	0.00	0.00	0.00	**0.8%**
Landfill	0.04	0.05	0.06	0.07	**22.3%**	0.04	0.05	0.05	0.07	**29.1%**
Incineration	0.00	0.00	0.00	0.00	**1.3%**	0.00	0.00	0.00	0.00	**1.3%**
Recycling	0.05	0.06	0.06	0.08	**25.9%**	0.02	0.03	0.03	0.04	**19.0%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S6 (continued): Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in Cyprus					**Flows of Ag in Czech Republic**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.02	0.02	0.02	**45.3%**	0.21	0.28	0.29	0.37	**45.4%**
Air	0.00	0.00	0.00	0.00	**3.4%**	0.01	0.02	0.02	0.03	**3.4%**
Surface water	0.00	0.00	0.00	0.00	**1.0%**	0.00	0.01	0.01	0.01	**1.0%**
Soil	0.00	0.00	0.00	0.00	**0.8%**	0.00	0.00	0.01	0.01	**0.8%**
Landfill - RW	0.01	0.01	0.01	0.01	**27.5%**	0.06	0.07	0.08	0.10	**12.0%**
Incineration	0.00	0.00	0.00	0.00	**1.3%**	0.05	0.07	0.08	0.10	**11.8%**
Recycling	0.01	0.01	0.01	0.01	**20.7%**	0.12	0.15	0.17	0.21	**25.7%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of Ag in Denmark					**Flows of Ag in Estonia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.17	0.22	0.23	0.29	**45.3%**	0.02	0.03	0.03	0.04	**45.3%**
Air	0.01	0.01	0.02	0.02	**3.4%**	0.00	0.00	0.00	0.00	**3.4%**
Surface water	0.00	0.00	0.00	0.01	**1.0%**	0.00	0.00	0.00	0.00	**1.0%**
Soil	0.00	0.00	0.00	0.01	**0.8%**	0.00	0.00	0.00	0.00	**0.8%**
Landfill - RW	0.01	0.01	0.01	0.01	**1.8%**	0.00	0.00	0.00	0.00	**4.4%**
Incineration	0.05	0.07	0.07	0.09	**14.9%**	0.01	0.02	0.02	0.02	**26.1%**
Recycling	0.12	0.15	0.16	0.21	**32.9%**	0.01	0.01	0.01	0.02	**19.1%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S6 (continued): Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in Finland					Flows of Ag in France				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.14	0.19	0.19	0.25	**45.3%**	1.63	2.22	2.24	2.85	**45.4%**
Air	0.01	0.01	0.01	0.02	**3.4%**	0.11	0.15	0.17	0.23	**3.4%**
Surface water	0.00	0.00	0.00	0.01	**1.0%**	0.03	0.04	0.05	0.07	**1.0%**
Soil	0.00	0.00	0.00	0.00	**0.8%**	0.03	0.03	0.04	0.05	**0.8%**
Landfill - RW	0.02	0.02	0.02	0.03	**5.2%**	0.25	0.32	0.35	0.45	**7.1%**
Incineration	0.03	0.04	0.04	0.05	**10.0%**	0.34	0.45	0.47	0.61	**9.5%**
Recycling	0.11	0.14	0.15	0.19	**34.3%**	1.16	1.55	1.62	2.08	**32.7%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of Ag in Germany					**Flows of Ag in Greece**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	2.37	3.18	3.24	4.12	**45.3%**	0.18	0.23	0.24	0.31	**45.4%**
Air	0.16	0.21	0.24	0.33	**3.4%**	0.01	0.02	0.02	0.02	**3.4%**
Surface water	0.04	0.05	0.07	0.10	**1.0%**	0.00	0.00	0.01	0.01	**1.0%**
Soil	0.04	0.05	0.06	0.08	**0.8%**	0.00	0.00	0.00	0.01	**0.8%**
Landfill - RW	0.05	0.06	0.08	0.10	**1.1%**	0.08	0.11	0.11	0.14	**20.6%**
Incineration	0.60	0.78	0.82	1.05	**11.5%**	0.00	0.01	0.01	0.01	**1.3%**
Recycling	1.92	2.49	2.64	3.37	**37.0%**	0.11	0.14	0.15	0.19	**27.5%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S6 (continued): Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in Hungary					**Flows of Ag in Ireland**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.15	0.20	0.21	0.27	**45.4%**	0.15	0.20	0.21	0.27	**45.3%**
Air	0.01	0.01	0.02	0.02	**3.4%**	0.01	0.01	0.02	0.02	**3.4%**
Surface water	0.00	0.00	0.00	0.01	**1.0%**	0.00	0.00	0.00	0.01	**1.0%**
Soil	0.00	0.00	0.00	0.01	**0.8%**	0.00	0.00	0.00	0.01	**0.8%**
Landfill	0.06	0.08	0.09	0.11	**18.7%**	0.04	0.06	0.06	0.08	**13.1%**
Incineration	0.02	0.02	0.02	0.03	**4.5%**	0.02	0.03	0.03	0.04	**6.9%**
Recycling	0.09	0.11	0.12	0.16	**26.2%**	0.10	0.13	0.14	0.18	**29.5%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of Ag in Italy					**Flows of Ag in Latvia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	1.35	1.77	1.85	2.35	**45.3%**	0.04	0.05	0.05	0.06	**45.3%**
Air	0.09	0.12	0.14	0.19	**3.4%**	0.00	0.00	0.00	0.00	**3.4%**
Surface water	0.02	0.03	0.04	0.06	**1.0%**	0.00	0.00	0.00	0.00	**1.0%**
Soil	0.02	0.03	0.03	0.04	**0.8%**	0.00	0.00	0.00	0.00	**0.8%**
Landfill	0.32	0.40	0.44	0.56	**10.7%**	0.02	0.03	0.03	0.04	**28.8%**
Incineration	0.32	0.40	0.44	0.56	**10.7%**	0.00	0.00	0.00	0.00	**1.5%**
Recycling	0.82	1.08	1.15	1.47	**28.1%**	0.01	0.02	0.02	0.03	**19.1%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S6 (continued): Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in Lithuania					**Flows of Ag in Luxembourg**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.05	0.06	0.07	0.08	**45.4%**	0.04	0.05	0.05	0.06	**45.3%**
Air	0.00	0.00	0.00	0.01	**3.4%**	0.00	0.00	0.00	0.00	**3.4%**
Surface water	0.00	0.00	0.00	0.00	**1.0%**	0.00	0.00	0.00	0.00	**1.0%**
Soil	0.00	0.00	0.00	0.00	**0.8%**	0.00	0.00	0.00	0.00	**0.8%**
Landfill - RW	0.02	0.02	0.03	0.03	**18.2%**	0.00	0.00	0.00	0.00	**3.4%**
Incineration	0.00	0.00	0.00	0.00	**1.3%**	0.01	0.01	0.01	0.02	**12.1%**
Recycling	0.03	0.04	0.04	0.06	**29.9%**	0.03	0.03	0.04	0.05	**34.0%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of Ag in Malta					**Flows of Ag in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.01	0.01	0.01	**45.4%**	0.51	0.65	0.70	0.89	**45.3%**
Air	0.00	0.00	0.00	0.00	**3.4%**	0.03	0.04	0.05	0.07	**3.4%**
Surface water	0.00	0.00	0.00	0.00	**1.0%**	0.01	0.01	0.01	0.02	**1.0%**
Soil	0.00	0.00	0.00	0.00	**0.8%**	0.01	0.01	0.01	0.02	**0.8%**
Landfill - RW	0.00	0.00	0.00	0.01	**18.7%**	0.01	0.02	0.02	0.03	**1.2%**
Incineration	0.00	0.00	0.00	0.00	**1.3%**	0.24	0.31	0.33	0.41	**21.1%**
Recycling	0.01	0.01	0.01	0.01	**29.4%**	0.30	0.38	0.42	0.53	**27.1%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S6 (continued): Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in Norway					**Flows of Ag in Poland**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.20	0.27	0.27	0.35	**45.3%**	0.62	0.79	0.84	1.07	**45.4%**
Air	0.01	0.02	0.02	0.03	**3.4%**	0.04	0.05	0.06	0.09	**3.4%**
Surface water	0.00	0.00	0.01	0.01	**1.0%**	0.01	0.01	0.02	0.03	**1.0%**
Soil	0.00	0.00	0.00	0.01	**0.8%**	0.01	0.01	0.02	0.02	**0.8%**
Landfill - RW	0.01	0.01	0.01	0.01	**1.4%**	0.22	0.29	0.31	0.39	**16.6%**
Incineration	0.06	0.08	0.08	0.11	**13.8%**	0.08	0.10	0.11	0.14	**5.7%**
Recycling	0.15	0.19	0.21	0.27	**34.3%**	0.36	0.48	0.51	0.65	**27.2%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of Ag in Portugal					**Flows of Ag in Romania**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.19	0.24	0.26	0.33	**45.4%**	0.26	0.33	0.36	0.45	**45.3%**
Air	0.01	0.02	0.02	0.03	**3.4%**	0.02	0.02	0.03	0.04	**3.4%**
Surface water	0.00	0.00	0.01	0.01	**1.0%**	0.00	0.01	0.01	0.01	**1.0%**
Soil	0.00	0.00	0.00	0.01	**0.8%**	0.00	0.01	0.01	0.01	**0.8%**
Landfill - RW	0.07	0.09	0.09	0.12	**16.4%**	0.21	0.26	0.28	0.36	**35.9%**
Incineration	0.03	0.04	0.04	0.06	**7.7%**	0.01	0.01	0.01	0.02	**1.6%**
Recycling	0.10	0.14	0.15	0.19	**25.4%**	0.07	0.09	0.09	0.12	**12.0%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S6 (continued): Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in the Slovakia					**Flows of Ag in Slovenia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.09	0.12	0.13	0.17	**45.4%**	0.04	0.05	0.05	0.06	**45.4%**
Air	0.01	0.01	0.01	0.01	**3.4%**	0.00	0.00	0.00	0.00	**3.4%**
Surface water	0.00	0.00	0.00	0.00	**1.0%**	0.00	0.00	0.00	0.00	**1.0%**
Soil	0.00	0.00	0.00	0.00	**0.8%**	0.00	0.00	0.00	0.00	**0.8%**
Landfill	0.05	0.07	0.07	0.09	**24.7%**	0.02	0.02	0.02	0.03	**20.0%**
Incineration	0.01	0.01	0.01	0.02	**5.2%**	0.00	0.00	0.00	0.00	**1.3%**
Recycling	0.04	0.05	0.06	0.07	**19.6%**	0.02	0.03	0.03	0.04	**28.0%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of Ag in Spain					**Flows of Ag in Sweden**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.98	1.26	1.34	1.71	**45.3%**	0.98	1.25	1.35	1.72	**45.4%**
Air	0.07	0.08	0.10	0.14	**3.4%**	0.07	0.09	0.10	0.14	**3.4%**
Surface water	0.02	0.02	0.03	0.04	**1.0%**	0.02	0.02	0.03	0.04	**1.0%**
Soil	0.02	0.02	0.02	0.03	**0.8%**	0.02	0.02	0.02	0.03	**0.8%**
Landfill	0.42	0.56	0.57	0.73	**19.2%**	0.02	0.03	0.03	0.05	**1.2%**
Incineration	0.10	0.13	0.13	0.17	**4.5%**	0.33	0.42	0.46	0.59	**15.5%**
Recycling	0.55	0.69	0.77	0.99	**25.9%**	0.70	0.93	0.97	1.25	**32.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S6 (continued): Masses of nano-Ag entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of Ag in Switzerland					**Flows of Ag in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.31	0.40	0.42	0.54	**45.3%**	1.65	2.15	2.27	2.88	**45.3%**
Air	0.02	0.03	0.03	0.04	**3.4%**	0.11	0.14	0.17	0.23	**3.4%**
Surface water	0.01	0.01	0.01	0.01	**1.0%**	0.03	0.04	0.05	0.07	**1.0%**
Soil	0.01	0.01	0.01	0.01	**0.8%**	0.03	0.03	0.04	0.05	**0.8%**
Landfill - RW	0.01	0.01	0.01	0.01	**1.0%**	0.43	0.55	0.59	0.76	**11.8%**
Incineration	0.10	0.13	0.14	0.17	**14.6%**	0.35	0.45	0.48	0.62	**9.6%**
Recycling	0.23	0.31	0.32	0.40	**34.0%**	1.01	1.30	1.41	1.81	**28.1%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7: Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in Austria					**Flows of CNT in Belgium**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.02	0.02	0.03	**0.3%**	0.02	0.02	0.03	0.04	**0.3%**
Air	0.02	0.03	0.04	0.05	**0.4%**	0.03	0.04	0.04	0.06	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.03	0.05	0.06	0.08	**0.7%**	0.04	0.06	0.07	0.10	**0.7%**
Landfill	0.46	0.62	0.68	0.90	**8.2%**	0.09	0.12	0.13	0.18	**1.3%**
Incineration	3.61	4.86	5.34	7.10	**64.4%**	4.83	6.51	7.14	9.50	**69.4%**
Recycling	1.45	1.95	2.16	2.89	**26.1%**	1.93	2.51	2.87	3.84	**27.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of CNT in Bulgaria					**Flows of CNT in Croatia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.00	0.01	0.01	0.01	**0.3%**	0.00	0.00	0.01	0.01	**0.3%**
Air	0.01	0.01	0.01	0.02	**0.4%**	0.01	0.01	0.01	0.01	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.01	0.02	0.02	0.03	**0.7%**	0.01	0.01	0.01	0.02	**0.7%**
Landfill	1.46	1.93	2.16	2.86	**78.0%**	1.13	1.52	1.68	2.22	**84.8%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	0.38	0.53	0.57	0.77	**20.7%**	0.18	0.24	0.27	0.37	**13.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7 (continued): Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in Cyprus					Flows of CNT in Czech Republic				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.00	0.00	0.00	0.00	**0.3%**	0.01	0.01	0.02	0.03	**0.3%**
Air	0.00	0.00	0.00	0.00	**0.4%**	0.02	0.03	0.03	0.04	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.00	0.00	0.00	0.00	**0.7%**	0.03	0.04	0.05	0.07	**0.7%**
Landfill	0.23	0.32	0.33	0.44	**84.0%**	2.86	3.82	4.23	5.63	**59.5%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.92	1.27	1.37	1.83	**19.3%**
Recycling	0.04	0.05	0.06	0.08	**14.6%**	0.93	1.23	1.41	1.90	**19.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of CNT in Denmark					**Flows of CNT in Estonia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.01	0.01	0.02	**0.3%**	0.00	0.00	0.00	0.00	**0.3%**
Air	0.01	0.02	0.02	0.03	**0.4%**	0.00	0.00	0.00	0.00	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.02	0.03	0.04	0.05	**0.7%**	0.00	0.00	0.01	0.01	**0.7%**
Landfill	0.05	0.07	0.07	0.10	**1.3%**	0.05	0.07	0.08	0.11	**10.2%**
Incineration	2.71	3.59	4.02	5.33	**72.6%**	0.40	0.54	0.59	0.78	**74.4%**
Recycling	0.91	1.23	1.37	1.83	**24.7%**	0.07	0.09	0.11	0.15	**14.0%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7 (continued): Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in Finland					**Flows of CNT in France**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.01	0.01	0.02	**0.3%**	0.08	0.12	0.14	0.20	**0.3%**
Air	0.01	0.02	0.02	0.03	**0.4%**	0.15	0.20	0.23	0.32	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.02	0.03	0.03	0.04	**0.7%**	0.23	0.31	0.37	0.51	**0.7%**
Landfill	0.75	0.99	1.11	1.48	**23.5%**	11.61	15.99	17.31	23.08	**31.7%**
Incineration	1.58	2.12	2.33	3.10	**49.2%**	15.63	22.16	23.20	30.86	**42.4%**
Recycling	0.82	1.12	1.23	1.65	**26.0%**	8.91	12.18	13.44	18.07	**24.6%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of CNT in Germany					**Flows of CNT in Greece**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.12	0.16	0.21	0.30	**0.3%**	0.01	0.01	0.02	0.02	**0.3%**
Air	0.22	0.29	0.34	0.46	**0.4%**	0.02	0.02	0.03	0.03	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.33	0.43	0.53	0.74	**0.7%**	0.02	0.03	0.04	0.06	**0.7%**
Landfill	0.15	0.20	0.22	0.29	**0.3%**	3.10	4.23	4.59	6.09	**77.3%**
Incineration	38.17	51.90	56.34	74.76	**71.3%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	14.40	19.99	21.42	28.59	**27.1%**	0.84	1.15	1.27	1.70	**21.4%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7 (continued): Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in Hungary					**Flows of CNT in Ireland**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.01	0.01	0.02	**0.3%**	0.01	0.01	0.01	0.02	**0.3%**
Air	0.01	0.02	0.02	0.03	**0.4%**	0.01	0.02	0.02	0.03	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.02	0.03	0.03	0.05	**0.7%**	0.02	0.03	0.03	0.05	**0.7%**
Landfill	2.30	3.26	3.41	4.53	**66.3%**	1.82	2.35	2.69	3.58	**52.3%**
Incineration	0.40	0.56	0.61	0.81	**11.8%**	0.83	1.12	1.23	1.64	**24.0%**
Recycling	0.70	0.93	1.05	1.42	**20.5%**	0.77	1.02	1.15	1.54	**22.3%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of CNT in Italy					**Flows of CNT in Latvia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.07	0.10	0.12	0.17	**0.3%**	0.00	0.00	0.00	0.00	**0.3%**
Air	0.12	0.17	0.19	0.26	**0.4%**	0.00	0.00	0.01	0.01	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.19	0.25	0.30	0.42	**0.7%**	0.00	0.01	0.01	0.01	**0.7%**
Landfill	11.98	16.62	17.72	23.54	**39.3%**	0.67	0.89	0.99	1.31	**83.5%**
Incineration	11.62	15.66	17.20	22.87	**38.2%**	0.00	0.01	0.01	0.01	**0.5%**
Recycling	6.37	8.60	9.52	12.74	**21.1%**	0.11	0.16	0.17	0.23	**14.6%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7 (continued): Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in Lithuania					**Flows of CNT in Luxembourg**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.00	0.00	0.00	0.01	**0.3%**	0.00	0.00	0.00	0.00	**0.3%**
Air	0.00	0.01	0.01	0.01	**0.4%**	0.00	0.00	0.01	0.01	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.01	0.01	0.01	0.01	**0.7%**	0.00	0.01	0.01	0.01	**0.7%**
Landfill	0.81	1.12	1.20	1.60	**75.9%**	0.10	0.14	0.16	0.21	**13.1%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.47	0.65	0.69	0.92	**58.6%**
Recycling	0.24	0.32	0.36	0.48	**22.8%**	0.21	0.29	0.32	0.43	**26.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of CNT in Malta					**Flows of CNT in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.00	0.00	0.00	0.00	**0.3%**	0.03	0.04	0.04	0.06	**0.3%**
Air	0.00	0.00	0.00	0.00	**0.4%**	0.05	0.06	0.07	0.10	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.00	0.00	0.00	0.00	**0.7%**	0.07	0.10	0.11	0.16	**0.7%**
Landfill	0.15	0.20	0.22	0.29	**78.3%**	0.13	0.18	0.20	0.27	**1.2%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	8.71	11.93	12.88	17.12	**75.9%**
Recycling	0.04	0.05	0.06	0.08	**20.4%**	2.44	3.29	3.67	4.91	**21.6%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7 (continued): Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in Norway					Flows of CNT in Poland				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.01	0.02	0.03	**0.3%**	0.03	0.04	0.05	0.08	**0.3%**
Air	0.02	0.03	0.03	0.04	**0.4%**	0.06	0.08	0.09	0.12	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.03	0.04	0.04	0.06	**0.7%**	0.08	0.11	0.14	0.19	**0.7%**
Landfill	0.09	0.13	0.14	0.18	**2.1%**	7.93	10.90	11.75	15.60	**57.2%**
Incineration	3.24	4.40	4.77	6.32	**71.1%**	2.83	3.78	4.23	5.64	**20.6%**
Recycling	1.14	1.53	1.71	2.28	**25.5%**	2.84	3.89	4.30	5.78	**20.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of CNT in Portugal					**Flows of CNT in Romania**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.01	0.01	0.02	0.02	**0.3%**	0.01	0.02	0.02	0.03	**0.3%**
Air	0.02	0.02	0.03	0.04	**0.4%**	0.02	0.03	0.04	0.05	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.03	0.04	0.04	0.06	**0.7%**	0.04	0.05	0.06	0.08	**0.7%**
Landfill	2.39	3.24	3.54	4.70	**56.0%**	5.27	7.05	7.79	10.35	**89.5%**
Incineration	0.98	1.29	1.46	1.95	**23.2%**	0.04	0.06	0.06	0.08	**0.7%**
Recycling	0.82	1.11	1.23	1.65	**19.5%**	0.49	0.67	0.73	0.98	**8.4%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7 (continued): Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in the Slovakia					**Flows of CNT in Slovenia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.00	0.01	0.01	0.01	**0.3%**	0.00	0.00	0.00	0.00	**0.3%**
Air	0.01	0.01	0.01	0.02	**0.4%**	0.00	0.00	0.01	0.01	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.01	0.02	0.02	0.03	**0.7%**	0.00	0.01	0.01	0.01	**0.7%**
Landfill	1.49	1.90	2.20	2.93	**69.8%**	0.62	0.83	0.92	1.22	**77.8%**
Incineration	0.24	0.33	0.36	0.49	**11.5%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	0.36	0.50	0.55	0.74	**17.4%**	0.16	0.22	0.25	0.33	**20.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of CNT in Spain					**Flows of CNT in Sweden**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.05	0.07	0.09	0.12	**0.3%**	0.01	0.02	0.02	0.04	**0.3%**
Air	0.09	0.13	0.14	0.19	**0.4%**	0.03	0.03	0.04	0.06	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.13	0.18	0.22	0.31	**0.7%**	0.04	0.05	0.06	0.09	**0.7%**
Landfill	14.97	20.55	22.08	29.36	**67.4%**	0.04	0.06	0.07	0.09	**0.7%**
Incineration	2.54	3.48	3.78	5.05	**11.5%**	4.64	6.25	6.86	9.11	**72.4%**
Recycling	4.31	5.90	6.45	8.63	**19.7%**	1.61	2.25	2.42	3.25	**25.6%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S7 (continued): Masses of CNT entering environmental and technical compartments. TC: Transfer coefficient.

	Flows of CNT in Switzerland					**Flows of CNT in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.02	0.02	0.03	0.04	**0.3%**	0.09	0.12	0.15	0.21	**0.3%**
Air	0.03	0.04	0.04	0.06	**0.4%**	0.15	0.20	0.24	0.32	**0.4%**
Surface water	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Soil	0.04	0.06	0.07	0.10	**0.7%**	0.23	0.31	0.37	0.51	**0.7%**
Landfill	0.00	0.00	0.00	0.00	**0.0%**	16.30	22.05	24.11	32.09	**43.6%**
Incineration	4.95	6.80	7.33	9.74	**71.5%**	12.51	16.57	18.53	24.65	**33.5%**
Recycling	1.86	2.52	2.78	3.72	**27.1%**	7.96	10.99	11.89	15.90	**21.5%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8: Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in Austria					**Flows of TiO_2 in Belgium**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	75.64	117.13	127.09	179.78	**61.6%**	98.31	139.04	164.91	233.37	**61.7%**
Air	0.94	1.37	1.67	2.42	**0.8%**	1.21	1.74	2.17	3.14	**0.8%**
Surface water	6.05	8.96	11.55	17.21	**5.6%**	7.83	10.83	14.97	22.31	**5.6%**
Soil	0.17	0.25	0.33	0.50	**0.2%**	0.23	0.34	0.43	0.65	**0.2%**
Landfill - RW	0.91	1.36	1.55	2.20	**0.7%**	0.19	0.28	0.33	0.47	**0.1%**
Incineration	7.16	10.56	12.22	17.39	**5.9%**	9.91	14.21	17.15	24.52	**6.4%**
Recycling	30.17	43.56	51.81	73.82	**25.1%**	39.46	58.64	67.42	96.01	**25.2%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of TiO_2 in Bulgaria					**Flows of TiO_2 in Croatia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	26.46	42.59	44.36	62.67	**61.6%**	18.85	28.18	31.63	44.83	**61.6%**
Air	0.33	0.48	0.58	0.85	**0.8%**	0.23	0.35	0.42	0.60	**0.8%**
Surface water	2.11	3.05	4.02	6.00	**5.6%**	1.51	2.23	2.88	4.28	**5.6%**
Soil	0.06	0.09	0.12	0.18	**0.2%**	0.04	0.06	0.08	0.12	**0.2%**
Landfill	3.60	5.39	6.17	8.79	**8.6%**	3.10	4.78	5.29	7.54	**10.3%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	9.74	14.23	16.73	23.83	**23.2%**	6.44	9.75	11.06	15.82	**21.5%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8 (continued): Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in Cyprus					**Flows of TiO_2 in Czech Republic**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	3.77	5.67	6.34	8.97	**61.6%**	68.35	105.16	114.23	161.26	**61.6%**
Air	0.05	0.07	0.08	0.12	**0.8%**	0.85	1.21	1.50	2.18	**0.8%**
Surface water	0.30	0.45	0.58	0.86	**5.6%**	5.45	7.47	10.36	15.44	**5.6%**
Soil	0.01	0.01	0.02	0.02	**0.2%**	0.16	0.24	0.30	0.45	**0.2%**
Landfill	0.41	0.63	0.70	1.00	**6.8%**	7.65	11.03	13.03	18.51	**7.0%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	2.37	3.50	4.05	5.76	**2.2%**
Recycling	1.50	2.15	2.58	3.67	**25.0%**	24.43	36.38	41.84	59.63	**22.6%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of TiO_2 in Denmark					**Flows of TiO_2 in Estonia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	52.90	82.06	88.78	125.59	**61.6%**	7.57	11.27	12.68	17.90	**61.6%**
Air	0.66	0.99	1.17	1.70	**0.8%**	0.09	0.14	0.17	0.24	**0.8%**
Surface water	4.23	6.11	8.07	12.03	**5.6%**	0.60	0.87	1.15	1.71	**5.6%**
Soil	0.12	0.17	0.23	0.35	**0.2%**	0.02	0.02	0.03	0.05	**0.2%**
Landfill	1.10	1.57	1.92	2.77	**1.3%**	0.14	0.20	0.25	0.35	**1.2%**
Incineration	5.60	8.54	9.76	14.03	**6.8%**	1.06	1.54	1.80	2.57	**8.8%**
Recycling	19.96	28.50	34.17	48.76	**23.7%**	2.62	3.69	4.50	6.42	**21.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8 (continued): Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in Finland					**Flows of TiO_2 in France**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	45.35	65.49	75.96	107.18	**61.6%**	518.68	792.90	874.14	1'236.35	**61.6%**
Air	0.56	0.85	1.00	1.45	**0.8%**	6.46	9.83	11.53	16.73	**0.8%**
Surface water	3.62	5.08	6.89	10.25	**5.6%**	41.44	58.39	79.34	118.27	**5.6%**
Soil	0.10	0.15	0.20	0.30	**0.2%**	1.19	1.80	2.31	3.46	**0.2%**
Landfill	1.75	2.66	3.00	4.29	**2.4%**	28.14	42.54	48.59	69.54	**3.4%**
Incineration	3.70	5.66	6.33	9.04	**5.1%**	38.02	55.21	65.61	93.93	**4.6%**
Recycling	17.51	25.97	29.89	42.55	**24.2%**	196.53	290.37	337.43	481.59	**23.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of TiO_2 in Germany					**Flows of TiO_2 in Greece**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	759.82	1'058.74	1'269.70	1'790.06	**61.6%**	56.90	83.26	95.26	134.55	**61.6%**
Air	9.38	13.13	16.72	24.22	**0.8%**	0.71	1.05	1.25	1.81	**0.8%**
Surface water	60.40	92.17	115.39	171.79	**5.6%**	4.54	6.47	8.65	12.86	**5.6%**
Soil	1.74	2.50	3.34	4.98	**0.2%**	0.13	0.20	0.25	0.37	**0.2%**
Landfill	0.27	0.40	0.47	0.67	**0.0%**	7.89	11.48	13.50	19.26	**8.7%**
Incineration	76.96	112.47	132.48	189.18	**6.4%**	0.03	0.04	0.05	0.08	**0.0%**
Recycling	306.71	450.21	522.91	745.00	**25.4%**	20.82	30.00	35.58	50.73	**23.0%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8 (continued): Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in Hungary					**Flows of TiO_2 in Ireland**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	49.06	74.39	82.43	116.46	**61.6%**	49.08	71.94	82.43	116.58	**61.6%**
Air	0.61	0.93	1.08	1.57	**0.8%**	0.61	0.85	1.09	1.57	**0.8%**
Surface water	3.92	5.58	7.49	11.15	**5.6%**	3.93	5.59	7.49	11.14	**5.6%**
Soil	0.11	0.17	0.22	0.32	**0.2%**	0.11	0.16	0.22	0.32	**0.2%**
Landfill	6.32	9.57	10.80	15.38	**8.1%**	3.77	5.55	6.53	9.34	**4.9%**
Incineration	1.16	1.76	2.00	2.85	**1.5%**	1.75	2.62	3.03	4.34	**2.3%**
Recycling	17.27	25.82	29.73	42.48	**22.2%**	19.35	29.29	33.00	47.02	**24.7%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of TiO_2 in Italy					**Flows of TiO_2 in Latvia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	430.00	631.75	722.10	1'020.25	**61.6%**	11.30	16.26	19.02	26.91	**61.6%**
Air	5.34	8.07	9.50	13.77	**0.8%**	0.14	0.22	0.25	0.36	**0.8%**
Surface water	34.26	51.81	65.63	97.56	**5.6%**	0.90	1.31	1.73	2.57	**5.6%**
Soil	0.99	1.44	1.90	2.84	**0.2%**	0.03	0.04	0.05	0.07	**0.2%**
Landfill	26.71	39.21	45.88	65.51	**3.9%**	1.77	2.53	3.04	4.34	**9.8%**
Incineration	26.18	37.54	45.00	64.24	**3.8%**	0.02	0.02	0.03	0.04	**0.1%**
Recycling	164.71	247.66	281.63	400.93	**24.0%**	3.92	6.13	6.76	9.66	**21.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8 (continued): Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in Lithuania					**Flows of TiO_2 in Luxembourg**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	15.06	21.74	25.32	35.82	**61.6%**	11.34	16.55	19.03	26.89	**61.6%**
Air	0.19	0.27	0.33	0.48	**0.8%**	0.14	0.21	0.25	0.36	**0.8%**
Surface water	1.21	1.85	2.30	3.44	**5.6%**	0.90	1.31	1.73	2.58	**5.6%**
Soil	0.03	0.05	0.07	0.10	**0.2%**	0.03	0.04	0.05	0.07	**0.2%**
Landfill	1.99	2.96	3.42	4.89	**8.3%**	0.19	0.28	0.32	0.46	**1.0%**
Incineration	0.01	0.01	0.01	0.02	**0.0%**	0.84	1.22	1.45	2.08	**4.7%**
Recycling	5.60	8.32	9.63	13.76	**23.4%**	4.72	6.94	8.05	11.47	**26.1%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of TiO_2 in Malta					**Flows of TiO_2 in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	2.65	3.92	4.43	6.26	**61.6%**	162.64	254.73	272.47	385.29	**61.6%**
Air	0.03	0.05	0.06	0.08	**0.8%**	2.01	3.05	3.59	5.20	**0.8%**
Surface water	0.21	0.30	0.40	0.60	**5.6%**	12.96	19.10	24.78	36.95	**5.6%**
Soil	0.01	0.01	0.01	0.02	**0.2%**	0.37	0.53	0.72	1.07	**0.2%**
Landfill	0.42	0.60	0.71	1.01	**9.9%**	0.42	0.64	0.71	1.01	**0.2%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	26.47	39.67	44.97	63.95	**10.2%**
Recycling	0.92	1.37	1.58	2.25	**21.9%**	55.10	83.95	95.09	136.09	**21.5%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8 (continued): Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in Norway					**Flows of TiO_2 in Poland**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	64.03	97.59	107.59	152.15	**61.6%**	196.32	292.84	329.38	465.29	**61.6%**
Air	0.79	1.21	1.42	2.06	**0.8%**	2.43	3.52	4.34	6.30	**0.8%**
Surface water	5.10	7.44	9.75	14.51	**5.6%**	15.73	22.70	29.87	44.44	**5.6%**
Soil	0.15	0.22	0.28	0.42	**0.2%**	0.45	0.69	0.87	1.30	**0.2%**
Landfill	0.18	0.29	0.32	0.46	**0.2%**	19.53	29.33	33.49	47.80	**6.3%**
Incineration	6.48	9.89	11.12	15.87	**6.4%**	5.27	7.81	9.20	13.23	**1.7%**
Recycling	25.67	37.74	44.08	62.77	**25.3%**	74.22	110.85	127.38	181.84	**23.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of TiO_2 in Portugal					**Flows of TiO_2 in Romania**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	60.54	89.09	101.54	143.60	**61.6%**	83.17	128.05	139.56	197.01	**61.6%**
Air	0.75	1.10	1.34	1.94	**0.8%**	1.03	1.49	1.84	2.67	**0.8%**
Surface water	4.82	7.29	9.24	13.79	**5.6%**	6.66	9.85	12.71	18.91	**5.6%**
Soil	0.14	0.21	0.27	0.40	**0.2%**	0.19	0.27	0.37	0.55	**0.2%**
Landfill	6.74	10.24	11.56	16.50	**7.0%**	13.69	19.89	23.35	33.25	**10.3%**
Incineration	2.81	4.17	4.84	6.92	**2.9%**	0.15	0.23	0.26	0.37	**0.1%**
Recycling	20.96	30.82	36.04	51.54	**21.9%**	28.24	41.48	48.48	69.24	**21.4%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8 (continued): Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in the Slovakia					**Flows of TiO_2 in Slovenia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	30.20	46.89	50.57	71.41	**61.6%**	11.28	16.70	18.96	26.84	**61.6%**
Air	0.38	0.55	0.67	0.96	**0.8%**	0.14	0.21	0.25	0.36	**0.8%**
Surface water	2.41	3.45	4.60	6.83	**5.6%**	0.90	1.28	1.72	2.57	**5.6%**
Soil	0.07	0.10	0.13	0.20	**0.2%**	0.03	0.04	0.05	0.07	**0.2%**
Landfill	3.87	5.56	6.64	9.46	**8.1%**	1.41	2.17	2.45	3.50	**8.0%**
Incineration	0.65	0.94	1.12	1.60	**1.4%**	0.01	0.01	0.01	0.02	**0.0%**
Recycling	10.73	16.12	18.37	26.16	**22.4%**	4.28	6.42	7.33	10.47	**23.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of TiO_2 in Spain					**Flows of TiO_2 in Sweden**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	313.50	450.67	525.99	743.90	**61.6%**	90.85	132.46	152.20	214.97	**61.6%**
Air	3.88	5.53	6.94	10.09	**0.8%**	1.13	1.63	2.01	2.91	**0.8%**
Surface water	24.98	35.60	47.76	71.11	**5.6%**	7.26	10.00	13.84	20.62	**5.6%**
Soil	0.72	1.07	1.39	2.07	**0.2%**	0.21	0.30	0.40	0.60	**0.2%**
Landfill	39.06	57.57	66.57	94.72	**7.8%**	0.09	0.14	0.17	0.24	**0.1%**
Incineration	6.86	10.27	11.71	16.66	**1.4%**	9.96	14.93	17.29	24.83	**7.0%**
Recycling	112.25	161.18	193.73	277.35	**22.7%**	35.81	51.33	61.19	87.10	**24.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S8 (continued): Masses of nano-TiO_2 entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of TiO_2 in Switzerland					**Flows of TiO_2 in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	98.33	141.85	164.73	232.31	**61.6%**	529.54	836.57	887.33	1'253.51	**61.6%**
Air	1.22	1.76	2.17	3.15	**0.8%**	6.58	9.36	11.69	16.95	**0.8%**
Surface water	7.82	10.98	14.97	22.29	**5.6%**	42.43	59.85	80.71	120.06	**5.6%**
Soil	0.23	0.34	0.43	0.65	**0.2%**	1.22	1.74	2.34	3.49	**0.2%**
Landfill	0.00	0.00	0.00	0.00	**0.0%**	36.70	57.08	62.55	89.03	**4.3%**
Incineration	6.71	10.35	11.52	16.44	**4.3%**	28.31	43.90	48.22	68.63	**3.3%**
Recycling	43.25	67.88	73.61	104.71	**27.5%**	203.58	304.34	347.74	495.51	**24.1%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9: Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in Austria					**Flows of ZnO in Belgium**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	2.83	21.49	25.13	47.80	**74.2%**	3.52	28.41	31.21	59.42	**74.2%**
Air	0.05	0.34	0.50	0.98	**1.5%**	0.06	0.44	0.63	1.21	**1.5%**
Surface water	0.28	2.07	2.70	5.21	**8.0%**	0.34	2.37	3.35	6.42	**8.0%**
Soil	0.04	0.29	0.43	0.84	**1.3%**	0.05	0.36	0.54	1.04	**1.3%**
Landfill	0.01	0.05	0.06	0.12	**0.2%**	0.00	0.01	0.01	0.02	**0.0%**
Incineration	0.05	0.40	0.49	0.93	**1.4%**	0.06	0.47	0.53	1.02	**1.3%**
Recycling	0.49	3.61	4.55	8.71	**13.4%**	0.64	4.91	5.79	11.05	**13.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of ZnO in Bulgaria					**Flows of ZnO in Croatia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.93	7.05	8.37	15.96	**74.2%**	0.71	5.46	5.99	11.38	**74.2%**
Air	0.02	0.11	0.17	0.33	**1.5%**	0.01	0.08	0.12	0.23	**1.5%**
Surface water	0.09	0.68	0.90	1.74	**8.0%**	0.07	0.47	0.64	1.24	**8.0%**
Soil	0.01	0.10	0.15	0.28	**1.3%**	0.01	0.07	0.10	0.20	**1.3%**
Landfill	0.03	0.19	0.25	0.48	**2.2%**	0.03	0.20	0.22	0.41	**2.7%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	0.15	1.05	1.45	2.78	**12.9%**	0.11	0.77	1.00	1.91	**12.4%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9 (continued): Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in Cyprus					**Flows of ZnO in Czech Republic**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.13	0.98	1.20	2.28	**74.2%**	2.50	16.69	21.58	41.02	**74.2%**
Air	0.00	0.02	0.02	0.05	**1.5%**	0.05	0.27	0.43	0.83	**1.5%**
Surface water	0.01	0.09	0.13	0.25	**8.0%**	0.25	1.69	2.31	4.44	**8.0%**
Soil	0.00	0.01	0.02	0.04	**1.3%**	0.04	0.26	0.37	0.72	**1.3%**
Landfill	0.00	0.03	0.03	0.06	**2.0%**	0.10	0.67	0.86	1.64	**3.0%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.02	0.17	0.22	0.42	**0.8%**
Recycling	0.02	0.16	0.21	0.40	**13.0%**	0.36	2.28	3.30	6.30	**11.3%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of ZnO in Denmark					**Flows of ZnO in Estonia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	1.89	15.13	16.74	31.89	**74.2%**	0.26	2.16	2.39	4.56	**74.2%**
Air	0.03	0.23	0.34	0.65	**1.5%**	0.00	0.04	0.05	0.09	**1.5%**
Surface water	0.18	1.30	1.80	3.46	**8.0%**	0.03	0.17	0.26	0.50	**8.0%**
Soil	0.03	0.18	0.29	0.56	**1.3%**	0.00	0.03	0.04	0.08	**1.3%**
Landfill	0.04	0.25	0.35	0.67	**1.6%**	0.00	0.01	0.01	0.02	**0.4%**
Incineration	0.01	0.11	0.14	0.26	**0.6%**	0.01	0.06	0.08	0.16	**2.5%**
Recycling	0.31	2.45	2.91	5.57	**12.9%**	0.04	0.31	0.39	0.75	**12.2%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9 (continued): Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in Finland					**Flows of ZnO in France**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	1.64	12.37	14.40	27.39	**74.2%**	19.67	126.76	165.87	315.10	**74.1%**
Air	0.03	0.20	0.29	0.56	**1.5%**	0.35	2.15	3.35	6.44	**1.5%**
Surface water	0.16	1.11	1.55	2.97	**8.0%**	1.93	13.28	17.84	34.30	**8.0%**
Soil	0.03	0.17	0.25	0.49	**1.3%**	0.30	1.79	2.88	5.57	**1.3%**
Landfill	0.00	0.03	0.04	0.07	**0.2%**	0.24	1.70	2.05	3.91	**0.9%**
Incineration	0.01	0.06	0.08	0.15	**0.4%**	0.32	2.33	2.76	5.27	**1.2%**
Recycling	0.31	2.14	2.81	5.37	**14.5%**	3.29	21.51	28.97	55.25	**12.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of ZnO in Germany					**Flows of ZnO in Greece**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	26.60	201.33	238.59	455.25	**74.2%**	2.02	16.24	17.94	34.07	**74.2%**
Air	0.48	3.51	4.80	9.30	**1.5%**	0.04	0.25	0.36	0.70	**1.5%**
Surface water	2.68	17.22	25.58	49.21	**8.0%**	0.20	1.51	1.93	3.72	**8.0%**
Soil	0.41	2.82	4.14	8.05	**1.3%**	0.03	0.21	0.31	0.60	**1.3%**
Landfill	0.00	0.01	0.01	0.01	**0.0%**	0.06	0.48	0.57	1.08	**2.3%**
Incineration	0.43	2.87	3.99	7.65	**1.2%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	4.78	36.70	44.43	85.40	**13.8%**	0.34	2.39	3.08	5.88	**12.7%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9 (continued): Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in Hungary					**Flows of ZnO in Ireland**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	1.68	13.39	15.54	29.53	**74.2%**	1.68	12.49	15.54	29.63	**74.1%**
Air	0.03	0.22	0.31	0.61	**1.5%**	0.03	0.21	0.31	0.60	**1.5%**
Surface water	0.17	1.17	1.67	3.22	**8.0%**	0.17	1.28	1.67	3.23	**8.0%**
Soil	0.03	0.18	0.27	0.52	**1.3%**	0.03	0.17	0.27	0.52	**1.3%**
Landfill	0.07	0.54	0.66	1.26	**3.1%**	0.01	0.11	0.14	0.27	**0.7%**
Incineration	0.01	0.09	0.12	0.23	**0.6%**	0.01	0.05	0.06	0.12	**0.3%**
Recycling	0.24	1.90	2.39	4.58	**11.4%**	0.31	2.43	2.96	5.67	**14.1%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of ZnO in Italy					**Flows of ZnO in Latvia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	15.60	124.59	136.75	260.06	**74.2%**	0.41	2.94	3.59	6.84	**74.2%**
Air	0.28	1.82	2.76	5.31	**1.5%**	0.01	0.04	0.07	0.14	**1.5%**
Surface water	1.55	9.73	14.69	28.31	**8.0%**	0.04	0.27	0.39	0.74	**8.0%**
Soil	0.24	1.54	2.37	4.60	**1.3%**	0.01	0.04	0.06	0.12	**1.3%**
Landfill	0.16	1.19	1.40	2.67	**0.8%**	0.01	0.10	0.13	0.25	**2.7%**
Incineration	0.15	1.15	1.37	2.61	**0.7%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	2.76	21.36	25.01	47.78	**13.6%**	0.07	0.48	0.60	1.15	**12.4%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9 (continued): Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in Lithuania					**Flows of ZnO in Luxembourg**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.55	4.34	4.79	9.12	**74.2%**	0.39	2.89	3.57	6.82	**74.2%**
Air	0.01	0.07	0.10	0.19	**1.5%**	0.01	0.05	0.07	0.14	**1.5%**
Surface water	0.05	0.37	0.51	0.99	**8.0%**	0.04	0.25	0.38	0.74	**8.0%**
Soil	0.01	0.05	0.08	0.16	**1.3%**	0.01	0.04	0.06	0.12	**1.3%**
Landfill	0.02	0.13	0.16	0.31	**2.5%**	0.00	0.01	0.01	0.01	**0.2%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.03	0.03	0.06	**0.7%**
Recycling	0.09	0.70	0.81	1.55	**12.5%**	0.07	0.55	0.69	1.31	**14.3%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of ZnO in Malta					**Flows of ZnO in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	0.10	0.75	0.84	1.60	**74.2%**	5.51	43.59	51.28	97.62	**74.2%**
Air	0.00	0.01	0.02	0.03	**1.5%**	0.10	0.66	1.03	1.99	**1.5%**
Surface water	0.01	0.07	0.09	0.17	**8.0%**	0.55	3.90	5.51	10.66	**8.0%**
Soil	0.00	0.01	0.01	0.03	**1.3%**	0.08	0.56	0.89	1.72	**1.3%**
Landfill	0.00	0.03	0.04	0.07	**3.3%**	0.00	0.02	0.02	0.04	**0.0%**
Incineration	0.00	0.00	0.00	0.00	**0.0%**	0.12	0.89	1.12	2.15	**1.6%**
Recycling	0.01	0.11	0.13	0.26	**11.8%**	0.97	7.11	9.28	17.78	**13.4%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9 (continued): Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in Norway					**Flows of ZnO in Poland**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	2.33	16.64	20.34	38.64	**74.2%**	7.24	55.49	62.19	118.40	**74.2%**
Air	0.04	0.29	0.41	0.79	**1.5%**	0.13	0.89	1.25	2.42	**1.5%**
Surface water	0.23	1.49	2.19	4.18	**8.0%**	0.72	5.01	6.67	12.82	**8.0%**
Soil	0.04	0.21	0.35	0.68	**1.3%**	0.11	0.76	1.08	2.09	**1.3%**
Landfill	0.00	0.01	0.02	0.03	**0.1%**	0.20	1.35	1.75	3.36	**2.1%**
Incineration	0.06	0.44	0.57	1.08	**2.1%**	0.01	0.09	0.12	0.24	**0.1%**
Recycling	0.40	2.62	3.55	6.79	**12.9%**	1.21	8.55	10.78	20.65	**12.9%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of ZnO in Portugal					**Flows of ZnO in Romania**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	2.15	16.28	19.12	36.47	**74.2%**	2.89	21.86	26.21	49.89	**74.2%**
Air	0.04	0.27	0.39	0.74	**1.5%**	0.05	0.34	0.53	1.02	**1.5%**
Surface water	0.22	1.32	2.05	3.94	**7.9%**	0.28	2.23	2.82	5.45	**8.0%**
Soil	0.03	0.20	0.33	0.65	**1.3%**	0.04	0.28	0.45	0.88	**1.3%**
Landfill	0.07	0.52	0.68	1.30	**2.6%**	0.13	0.98	1.22	2.33	**3.4%**
Incineration	0.03	0.20	0.28	0.54	**1.1%**	0.00	0.01	0.01	0.02	**0.0%**
Recycling	0.31	2.19	2.93	5.63	**11.4%**	0.43	3.04	4.11	7.90	**11.6%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9 (continued): Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in the Slovakia					**Flows of ZnO in Slovenia**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	1.09	7.96	9.56	18.20	**74.2%**	0.41	3.21	3.58	6.81	**74.2%**
Air	0.02	0.14	0.19	0.37	**1.5%**	0.01	0.05	0.07	0.14	**1.5%**
Surface water	0.11	0.70	1.03	1.99	**8.0%**	0.04	0.25	0.38	0.74	**7.9%**
Soil	0.02	0.10	0.17	0.32	**1.3%**	0.01	0.04	0.06	0.12	**1.3%**
Landfill	0.03	0.23	0.28	0.53	**2.1%**	0.01	0.06	0.07	0.14	**1.5%**
Incineration	0.00	0.03	0.05	0.09	**0.3%**	0.00	0.00	0.00	0.00	**0.0%**
Recycling	0.18	1.25	1.62	3.11	**12.6%**	0.07	0.50	0.66	1.25	**13.6%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**
	Flows of ZnO in Spain					**Flows of ZnO in Sweden**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	11.93	83.87	99.74	189.64	**74.1%**	3.01	24.88	28.61	54.57	**74.2%**
Air	0.22	1.49	2.02	3.88	**1.5%**	0.05	0.36	0.58	1.12	**1.5%**
Surface water	1.19	7.82	10.71	20.55	**8.0%**	0.30	2.17	3.08	5.94	**8.0%**
Soil	0.18	1.03	1.73	3.36	**1.3%**	0.05	0.32	0.50	0.96	**1.3%**
Landfill	0.50	3.50	4.26	8.14	**3.2%**	0.00	0.00	0.00	0.00	**0.0%**
Incineration	0.08	0.62	0.73	1.40	**0.5%**	0.03	0.26	0.32	0.62	**0.8%**
Recycling	1.76	10.76	15.33	29.34	**11.4%**	0.55	4.60	5.49	10.52	**14.2%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S9 (continued): Masses of nano-ZnO entering environmental and technical compartments. TC: Transfer coefficients.

	Flows of ZnO in Switzerland					**Flows of ZnO in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mean TC**	Q15	Mode	Mean	Q85	**Mean TC**
To	In tonnes					In tonnes				
Waste water	3.65	25.21	31.28	59.60	**74.2%**	19.34	153.30	167.65	319.69	**74.2%**
Air	0.07	0.47	0.63	1.21	**1.5%**	0.36	2.37	3.38	6.51	**1.5%**
Surface water	0.36	2.42	3.36	6.48	**8.0%**	1.92	12.21	18.01	34.70	**8.0%**
Soil	0.06	0.36	0.54	1.05	**1.3%**	0.29	1.98	2.90	5.64	**1.3%**
Landfill	0.00	0.00	0.00	0.00	**0.0%**	0.33	2.47	2.94	5.62	**1.3%**
Incineration	0.04	0.27	0.35	0.67	**0.8%**	0.25	1.82	2.19	4.20	**1.0%**
Recycling	0.67	4.59	6.00	11.49	**14.2%**	3.19	22.67	28.96	55.45	**12.8%**
Export	0.00	0.00	0.00	0.00	**0.0%**	0.00	0.00	0.00	0.00	**0.0%**

Table S10: Masses of nano-Ag entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-Ag in Austria					**Flows of nano-Ag in Belgium**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.01	0.02	0.02	0.02	**5%**	0.01	0.01	0.01	0.02	**2%**
Incineration	0.07	0.09	0.10	0.12	**26%**	0.08	0.10	0.11	0.14	**23%**
Recycling	0.19	0.25	0.26	0.32	**69%**	0.25	0.32	0.34	0.44	**75%**
	Flows of nano-Ag in Bulgaria					**Flows of nano-Ag in Croatia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.04	0.05	0.06	0.07	**45%**	0.04	0.05	0.05	0.07	**61%**
Incineration	0.00	0.00	0.00	0.00	**2%**	0.00	0.00	0.00	0.00	**2%**
Recycling	0.05	0.06	0.06	0.08	**53%**	0.02	0.03	0.03	0.04	**37%**
	Flows of nano-Ag in Cyprus					**Flows of nano-Ag in Czech Republic**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.01	0.01	0.01	0.01	**55%**	0.06	0.07	0.08	0.10	**24%**
Incineration	0.00	0.00	0.00	0.00	**2%**	0.05	0.07	0.08	0.10	**23%**
Recycling	0.01	0.01	0.01	0.01	**42%**	0.12	0.15	0.17	0.21	**52%**
	Flows of nano-Ag in Denmark					**Flows of nano-Ag in Estonia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.01	0.01	0.01	0.01	**4%**	0.00	0.00	0.00	0.00	**8%**
Incineration	0.05	0.07	0.07	0.09	**30%**	0.01	0.02	0.02	0.02	**53%**
Recycling	0.12	0.15	0.16	0.21	**66%**	0.01	0.01	0.01	0.02	**39%**

Table S10 (continued): Masses of nano-Ag entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-Ag in Finland					**Flows of nano-Ag in France**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.02	0.02	0.02	0.03	**11%**	0.25	0.32	0.35	0.45	**14%**
Incineration	0.03	0.04	0.04	0.05	**20%**	0.34	0.45	0.47	0.61	**20%**
Recycling	0.11	0.14	0.15	0.19	**70%**	1.16	1.55	1.62	2.08	**67%**
	Flows of nano-Ag in Germany					**Flows of nano-Ag in Greece**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.05	0.06	0.08	0.10	**2%**	0.08	0.11	0.11	0.14	**42%**
Incineration	0.60	0.78	0.82	1.05	**23%**	0.00	0.01	0.01	0.01	**2%**
Recycling	1.92	2.49	2.64	3.37	**75%**	0.11	0.14	0.15	0.19	**55%**
	Flows of nano-Ag in Hungary					**Flows of nano-Ag in Ireland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.06	0.08	0.09	0.11	**38%**	0.04	0.06	0.06	0.08	**27%**
Incineration	0.02	0.02	0.02	0.03	**9%**	0.02	0.03	0.03	0.04	**14%**
Recycling	0.09	0.11	0.12	0.16	**53%**	0.10	0.13	0.14	0.18	**60%**
	Flows of nano-Ag in Italy					**Flows of nano-Ag in Latvia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.32	0.40	0.44	0.56	**21%**	0.02	0.03	0.03	0.04	**60%**
Incineration	0.32	0.40	0.44	0.56	**21%**	0.00	0.00	0.00	0.00	**3%**
Recycling	0.82	1.08	1.15	1.47	**57%**	0.01	0.02	0.02	0.03	**38%**

Table S10 (continued): Masses of nano-Ag entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-Ag in Lithuania					**Flows of nano-Ag in Luxembourg**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.02	0.02	0.03	0.03	**36%**	0.00	0.00	0.00	0.00	**7%**
Incineration	0.00	0.00	0.00	0.00	**3%**	0.01	0.01	0.01	0.02	**25%**
Recycling	0.03	0.04	0.04	0.06	**62%**	0.03	0.03	0.04	0.05	**68%**
	Flows of nano-Ag in Malta					**Flows of nano-Ag in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.00	0.00	0.01	**38%**	0.01	0.02	0.02	0.03	**2%**
Incineration	0.00	0.00	0.00	0.00	**3%**	0.24	0.31	0.33	0.41	**44%**
Recycling	0.01	0.01	0.01	0.01	**60%**	0.30	0.38	0.42	0.53	**54%**
	Flows of nano-Ag in Norway					**Flows of nano-Ag in Poland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.01	0.01	0.01	0.01	**3%**	0.22	0.29	0.31	0.39	**33%**
Incineration	0.06	0.08	0.08	0.11	**29%**	0.08	0.10	0.11	0.14	**12%**
Recycling	0.15	0.19	0.21	0.27	**69%**	0.36	0.48	0.51	0.65	**55%**
	Flows of nano-Ag in Portugal					**Flows of nano-Ag in Romania**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.07	0.09	0.09	0.12	**33%**	0.21	0.26	0.28	0.36	**72%**
Incineration	0.03	0.04	0.04	0.06	**16%**	0.01	0.01	0.01	0.02	**3%**
Recycling	0.10	0.14	0.15	0.19	**52%**	0.07	0.09	0.09	0.12	**25%**

Table S10 (continued): Masses of nano-Ag entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-Ag in the Slovakia					**Flows of nano-Ag in Slovenia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.05	0.07	0.07	0.09	**51%**	0.02	0.02	0.02	0.03	**40%**
Incineration	0.01	0.01	0.01	0.02	**10%**	0.00	0.00	0.00	0.00	**2%**
Recycling	0.04	0.05	0.06	0.07	**39%**	0.02	0.03	0.03	0.04	**57%**
	Flows of nano-Ag in Spain					**Flows of nano-Ag in Sweden**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.42	0.56	0.57	0.73	**40%**	0.02	0.03	0.03	0.05	**2%**
Incineration	0.10	0.13	0.13	0.17	**9%**	0.33	0.42	0.46	0.59	**31%**
Recycling	0.55	0.69	0.77	0.99	**51%**	0.70	0.93	0.97	1.25	**67%**
	Flows of nano-Ag in Switzerland					**Flows of nano-Ag in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.01	0.01	0.01	0.01	**2%**	0.43	0.55	0.59	0.76	**24%**
Incineration	0.10	0.13	0.14	0.17	**29%**	0.35	0.45	0.48	0.62	**19%**
Recycling	0.23	0.31	0.32	0.40	**69%**	1.01	1.30	1.41	1.81	**57%**

Table S11: Masses of CNT entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of CNT in Austria					**Flows of CNT in Belgium**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.46	0.62	0.68	0.90	**8%**	0.09	0.12	0.13	0.18	**1%**
Incineration	3.61	4.86	5.34	7.10	**65%**	4.83	6.51	7.14	9.50	**71%**
Recycling	1.45	1.95	2.16	2.89	**26%**	1.93	2.51	2.87	3.84	**28%**
	Flows of CNT in Bulgaria					**Flows of CNT in Croatia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	1.46	1.93	2.16	2.86	**79%**	1.13	1.52	1.68	2.22	**86%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.00	0.00	0.00	0.00	**0%**
Recycling	0.38	0.53	0.57	0.77	**21%**	0.18	0.24	0.27	0.37	**14%**
	Flows of CNT in Cyprus					**Flows of CNT in Czech Republic**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.23	0.32	0.33	0.44	**86%**	2.86	3.82	4.23	5.63	**60%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.92	1.27	1.37	1.83	**20%**
Recycling	0.04	0.05	0.06	0.08	**14%**	0.93	1.23	1.41	1.90	**20%**
	Flows of CNT in Denmark					**Flows of CNT in Estonia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.05	0.07	0.07	0.10	**1%**	0.05	0.07	0.08	0.11	**10%**
Incineration	2.71	3.59	4.02	5.33	**73%**	0.40	0.54	0.59	0.78	**76%**
Recycling	0.91	1.23	1.37	1.83	**25%**	0.07	0.09	0.11	0.15	**13%**

Table S11 (continued): Masses of CNT entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of CNT in Finland					Flows of CNT in France				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.75	0.99	1.11	1.48	**23%**	11.61	15.99	17.31	23.08	**32%**
Incineration	1.58	2.12	2.33	3.10	**50%**	15.63	22.16	23.20	30.86	**44%**
Recycling	0.82	1.12	1.23	1.65	**27%**	8.91	12.18	13.44	18.07	**24%**
	Flows of CNT in Germany					**Flows of CNT in Greece**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.15	0.20	0.22	0.29	**0%**	3.10	4.23	4.59	6.09	**79%**
Incineration	38.17	51.90	56.34	74.76	**72%**	0.00	0.00	0.00	0.00	**0%**
Recycling	14.40	19.99	21.42	28.59	**28%**	0.84	1.15	1.27	1.70	**21%**
	Flows of CNT in Hungary					**Flows of CNT in Ireland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	2.30	3.26	3.41	4.53	**69%**	1.82	2.35	2.69	3.58	**52%**
Incineration	0.40	0.56	0.61	0.81	**12%**	0.83	1.12	1.23	1.64	**25%**
Recycling	0.70	0.93	1.05	1.42	**20%**	0.77	1.02	1.15	1.54	**23%**
	Flows of CNT in Italy					**Flows of CNT in Latvia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	11.98	16.62	17.72	23.54	**41%**	0.67	0.89	0.99	1.31	**84%**
Incineration	11.62	15.66	17.20	22.87	**38%**	0.00	0.01	0.01	0.01	**1%**
Recycling	6.37	8.60	9.52	12.74	**21%**	0.11	0.16	0.17	0.23	**15%**

Table S11 (continued): Masses of CNT entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of CNT in Lithuania					Flows of CNT in Luxembourg				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.81	1.12	1.20	1.60	**78%**	0.10	0.14	0.16	0.21	**13%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.47	0.65	0.69	0.92	**60%**
Recycling	0.24	0.32	0.36	0.48	**22%**	0.21	0.29	0.32	0.43	**27%**
	Flows of CNT in Malta					**Flows of CNT in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.15	0.20	0.22	0.29	**80%**	0.13	0.18	0.20	0.27	**1%**
Incineration	0.00	0.00	0.00	0.00	**0%**	8.71	11.93	12.88	17.12	**77%**
Recycling	0.04	0.05	0.06	0.08	**21%**	2.44	3.29	3.67	4.91	**21%**
	Flows of CNT in Norway					**Flows of CNT in Poland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.09	0.13	0.14	0.18	**2%**	7.93	10.90	11.75	15.60	**59%**
Incineration	3.24	4.40	4.77	6.32	**73%**	2.83	3.78	4.23	5.64	**20%**
Recycling	1.14	1.53	1.71	2.28	**25%**	2.84	3.89	4.30	5.78	**21%**
	Flows of CNT in Portugal					**Flows of CNT in Romania**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	2.39	3.24	3.54	4.70	**57%**	5.27	7.05	7.79	10.35	**91%**
Incineration	0.98	1.29	1.46	1.95	**23%**	0.04	0.06	0.06	0.08	**1%**
Recycling	0.82	1.11	1.23	1.65	**20%**	0.49	0.67	0.73	0.98	**9%**

Table S11 (continued): Masses of CNT entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of CNT in the Slovakia					**Flows of CNT in Slovenia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	1.49	1.90	2.20	2.93	**70%**	0.62	0.83	0.92	1.22	**79%**
Incineration	0.24	0.33	0.36	0.49	**12%**	0.00	0.00	0.00	0.00	**0%**
Recycling	0.36	0.50	0.55	0.74	**18%**	0.16	0.22	0.25	0.33	**21%**
	Flows of CNT in Spain					**Flows of CNT in Sweden**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	14.97	20.55	22.08	29.36	**69%**	0.04	0.06	0.07	0.09	**1%**
Incineration	2.54	3.48	3.78	5.05	**12%**	4.64	6.25	6.86	9.11	**73%**
Recycling	4.31	5.90	6.45	8.63	**20%**	1.61	2.25	2.42	3.25	**26%**
	Flows of CNT in Switzerland					**Flows of CNT in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.00	0.00	0.00	**0%**	16.30	22.05	24.11	32.09	**44%**
Incineration	4.95	6.80	7.33	9.74	**73%**	12.51	16.57	18.53	24.65	**33%**
Recycling	1.86	2.52	2.78	3.72	**27%**	7.96	10.99	11.89	15.90	**22%**

Table S12: Masses of nano-TiO_2 entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-TiO_2 in Austria					**Flows of nano-TiO_2 in Belgium**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.91	1.36	1.55	2.20	**2%**	0.19	0.28	0.33	0.47	**0%**
Incineration	7.16	10.56	12.22	17.39	**19%**	9.91	14.21	17.15	24.52	**19%**
Recycling	30.17	43.56	51.81	73.82	**79%**	39.46	58.64	67.42	96.01	**80%**
	Flows of nano-TiO_2 in Bulgaria					**Flows of nano-TiO_2 in Croatia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	3.60	5.39	6.17	8.79	**27%**	3.10	4.78	5.29	7.54	**33%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.00	0.00	0.00	0.00	**0%**
Recycling	9.74	14.23	16.73	23.83	**73%**	6.44	9.75	11.06	15.82	**67%**
	Flows of nano-TiO_2 in Cyprus					**Flows of nano-TiO_2 in Czech Republic**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.41	0.63	0.70	1.00	**23%**	7.65	11.03	13.03	18.51	**22%**
Incineration	0.00	0.00	0.00	0.00	**0%**	2.37	3.50	4.05	5.76	**7%**
Recycling	1.50	2.15	2.58	3.67	**77%**	24.43	36.38	41.84	59.63	**71%**
	Flows of nano-TiO_2 in Denmark					**Flows of nano-TiO_2 in Estonia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	1.10	1.57	1.92	2.77	**4%**	0.14	0.20	0.25	0.35	**4%**
Incineration	5.60	8.54	9.76	14.03	**22%**	1.06	1.54	1.80	2.57	**28%**
Recycling	19.96	28.50	34.17	48.76	**74%**	2.62	3.69	4.50	6.42	**68%**

Table S12 (continued): Masses of nano-TiO_2 entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-TiO_2 in Finland					**Flows of nano-TiO_2 in France**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	1.75	2.66	3.00	4.29	**8%**	28.14	42.54	48.59	69.54	**11%**
Incineration	3.70	5.66	6.33	9.04	**17%**	38.02	55.21	65.61	93.93	**14%**
Recycling	17.51	25.97	29.89	42.55	**76%**	196.53	290.37	337.43	481.59	**75%**
	Flows of nano-TiO_2 in Germany					**Flows of nano-TiO_2 in Greece**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.27	0.40	0.47	0.67	**0%**	7.89	11.48	13.50	19.26	**28%**
Incineration	76.96	112.47	132.48	189.18	**20%**	0.03	0.04	0.05	0.08	**0%**
Recycling	306.71	450.21	522.91	745.00	**80%**	20.82	30.00	35.58	50.73	**72%**
	Flows of nano-TiO_2 in Hungary					**Flows of nano-TiO_2 in Ireland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	6.32	9.57	10.80	15.38	**26%**	3.77	5.55	6.53	9.34	**15%**
Incineration	1.16	1.76	2.00	2.85	**5%**	1.75	2.62	3.03	4.34	**7%**
Recycling	17.27	25.82	29.73	42.48	**69%**	19.35	29.29	33.00	47.02	**78%**
	Flows of nano-TiO_2 in Italy					**Flows of nano-TiO_2 in Latvia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	26.71	39.21	45.88	65.51	**12%**	1.77	2.53	3.04	4.34	**29%**
Incineration	26.18	37.54	45.00	64.24	**12%**	0.02	0.02	0.03	0.04	**0%**
Recycling	164.71	247.66	281.63	400.93	**76%**	3.92	6.13	6.76	9.66	**71%**

Table S12 (continued): Masses of nano-TiO_2 entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-TiO_2 in Lithuania					**Flows of nano-TiO_2 in Luxembourg**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	1.99	2.96	3.42	4.89	**26%**	0.19	0.28	0.32	0.46	**3%**
Incineration	0.01	0.01	0.01	0.02	**0%**	0.84	1.22	1.45	2.08	**14%**
Recycling	5.60	8.32	9.63	13.76	**74%**	4.72	6.94	8.05	11.47	**82%**
	Flows of nano-TiO_2 in Malta					**Flows of nano-TiO_2 in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.42	0.60	0.71	1.01	**30%**	0.42	0.64	0.71	1.01	**1%**
Incineration	0.00	0.00	0.00	0.00	**0%**	26.47	39.67	44.97	63.95	**32%**
Recycling	0.92	1.37	1.58	2.25	**69%**	55.10	83.95	95.09	136.09	**68%**
	Flows of nano-TiO_2 in Norway					**Flows of nano-TiO_2 in Poland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.18	0.29	0.32	0.46	**1%**	19.53	29.33	33.49	47.80	**20%**
Incineration	6.48	9.89	11.12	15.87	**21%**	5.27	7.81	9.20	13.23	**5%**
Recycling	25.67	37.74	44.08	62.77	**79%**	74.22	110.85	127.38	181.84	**75%**
	Flows of nano-TiO_2 in Portugal					**Flows of nano-TiO_2 in Romania**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	6.74	10.24	11.56	16.50	**23%**	13.69	19.89	23.35	33.25	**32%**
Incineration	2.81	4.17	4.84	6.92	**9%**	0.15	0.23	0.26	0.37	**0%**
Recycling	20.96	30.82	36.04	51.54	**68%**	28.24	41.48	48.48	69.24	**67%**

Table S12 (continued): Masses of nano-TiO_2 entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-TiO_2 in the Slovakia					**Flows of nano-TiO_2 in Slovenia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	3.87	5.56	6.64	9.46	**25%**	1.41	2.17	2.45	3.50	**25%**
Incineration	0.65	0.94	1.12	1.60	**4%**	0.01	0.01	0.01	0.02	**0%**
Recycling	10.73	16.12	18.37	26.16	**71%**	4.28	6.42	7.33	10.47	**75%**
	Flows of nano-TiO_2 in Spain					**Flows of nano-TiO_2 in Sweden**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	39.06	57.57	66.57	94.72	**25%**	0.09	0.14	0.17	0.24	**0%**
Incineration	6.86	10.27	11.71	16.66	**4%**	9.96	14.93	17.29	24.83	**22%**
Recycling	112.25	161.18	193.73	277.35	**70%**	35.81	51.33	61.19	87.10	**77%**
	Flows of nano-TiO_2 in Switzerland					**Flows of nano-TiO_2 in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.00	0.00	0.00	**0%**	36.70	57.08	62.55	89.03	**14%**
Incineration	6.71	10.35	11.52	16.44	**13%**	28.31	43.90	48.22	68.63	**11%**
Recycling	43.25	67.88	73.61	104.71	**87%**	203.58	304.34	347.74	495.51	**75%**

Table S12: Masses of nano-ZnO entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-ZnO in Austria					**Flows of nano-ZnO in Belgium**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.01	0.05	0.06	0.12	**1%**	0.00	0.01	0.01	0.02	**0%**
Incineration	0.05	0.40	0.49	0.93	**10%**	0.06	0.47	0.53	1.02	**9%**
Recycling	0.49	3.61	4.55	8.71	**89%**	0.64	4.91	5.79	11.05	**91%**
	Flows of nano-ZnO in Bulgaria					**Flows of nano-ZnO in Croatia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.03	0.19	0.25	0.48	**15%**	0.03	0.20	0.22	0.41	**20%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.00	0.00	0.00	0.00	**0%**
Recycling	0.15	1.05	1.45	2.78	**85%**	0.11	0.77	1.00	1.91	**80%**
	Flows of nano-ZnO in Cyprus					**Flows of nano-ZnO in Czech Republic**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.03	0.03	0.06	**15%**	0.10	0.67	0.86	1.64	**22%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.02	0.17	0.22	0.42	**5%**
Recycling	0.02	0.16	0.21	0.40	**85%**	0.36	2.28	3.30	6.30	**73%**
	Flows of nano-ZnO in Denmark					**Flows of nano-ZnO in Estonia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.04	0.25	0.35	0.67	**9%**	0.00	0.01	0.01	0.02	**2%**
Incineration	0.01	0.11	0.14	0.26	**4%**	0.01	0.06	0.08	0.16	**16%**
Recycling	0.31	2.45	2.91	5.57	**87%**	0.04	0.31	0.39	0.75	**81%**

Table S12 (continued): Masses of nano-ZnO entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-ZnO in Finland					**Flows of nano-ZnO in France**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.03	0.04	0.07	**1%**	0.24	1.70	2.05	3.91	**7%**
Incineration	0.01	0.06	0.08	0.15	**3%**	0.32	2.33	2.76	5.27	**9%**
Recycling	0.31	2.14	2.81	5.37	**96%**	3.29	21.51	28.97	55.25	**84%**
	Flows of nano-ZnO in Germany					**Flows of nano-ZnO in Greece**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.01	0.01	0.01	**0%**	0.06	0.48	0.57	1.08	**17%**
Incineration	0.43	2.87	3.99	7.65	**7%**	0.00	0.00	0.00	0.00	**0%**
Recycling	4.78	36.70	44.43	85.40	**93%**	0.34	2.39	3.08	5.88	**83%**
	Flows of nano-ZnO in Hungary					**Flows of nano-ZnO in Ireland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.07	0.54	0.66	1.26	**21%**	0.01	0.11	0.14	0.27	**4%**
Incineration	0.01	0.09	0.12	0.23	**4%**	0.01	0.05	0.06	0.12	**2%**
Recycling	0.24	1.90	2.39	4.58	**75%**	0.31	2.43	2.96	5.67	**94%**
	Flows of nano-ZnO in Italy					**Flows of nano-ZnO in Latvia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.16	1.19	1.40	2.67	**5%**	0.01	0.10	0.13	0.25	**17%**
Incineration	0.15	1.15	1.37	2.61	**5%**	0.00	0.00	0.00	0.00	**0%**
Recycling	2.76	21.36	25.01	47.78	**90%**	0.07	0.48	0.60	1.15	**83%**

Table S12 (continued): Masses of nano-ZnO entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-ZnO in Lithuania					Flows of nano-ZnO in Luxembourg				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.02	0.13	0.16	0.31	**15%**	0.00	0.01	0.01	0.01	**1%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.00	0.03	0.03	0.06	**4%**
Recycling	0.09	0.70	0.81	1.55	**85%**	0.07	0.55	0.69	1.31	**95%**
	Flows of nano-ZnO in Malta					**Flows of nano-ZnO in the Netherlands**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.03	0.04	0.07	**23%**	0.00	0.02	0.02	0.04	**0%**
Incineration	0.00	0.00	0.00	0.00	**0%**	0.12	0.89	1.12	2.15	**11%**
Recycling	0.01	0.11	0.13	0.26	**77%**	0.97	7.11	9.28	17.78	**89%**
	Flows of nano-ZnO in Norway					**Flows of nano-ZnO in Poland**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.01	0.02	0.03	**0%**	0.20	1.35	1.75	3.36	**14%**
Incineration	0.06	0.44	0.57	1.08	**14%**	0.01	0.09	0.12	0.24	**1%**
Recycling	0.40	2.62	3.55	6.79	**85%**	1.21	8.55	10.78	20.65	**86%**
	Flows of nano-ZnO in Portugal					**Flows of nano-ZnO in Romania**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.07	0.52	0.68	1.30	**18%**	0.13	0.98	1.22	2.33	**24%**
Incineration	0.03	0.20	0.28	0.54	**7%**	0.00	0.01	0.01	0.02	**0%**
Recycling	0.31	2.19	2.93	5.63	**75%**	0.43	3.04	4.11	7.90	**76%**

Table S12 (continued): Masses of nano-ZnO entering landfilling, incineration and recycling (tonnes) in the European countries

	Flows of nano-ZnO in the Slovakia					**Flows of nano-ZnO in Slovenia**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.03	0.23	0.28	0.53	**15%**	0.01	0.06	0.07	0.14	**10%**
Incineration	0.00	0.03	0.05	0.09	**2%**	0.00	0.00	0.00	0.00	**0%**
Recycling	0.18	1.25	1.62	3.11	**83%**	0.07	0.50	0.66	1.25	**90%**
	Flows of nano-ZnO in Spain					**Flows of nano-ZnO in Sweden**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.50	3.50	4.26	8.14	**24%**	0.00	0.00	0.00	0.00	**0%**
Incineration	0.08	0.62	0.73	1.40	**4%**	0.03	0.26	0.32	0.62	**5%**
Recycling	1.76	10.76	15.33	29.34	**72%**	0.55	4.60	5.49	10.52	**95%**
	Flows of nano-ZnO in Switzerland					**Flows of nano-ZnO in the United Kingdom**				
	Q15	Mode	Mean	Q85	**Mode TC**	Q15	Mode	Mean	Q85	**Mode TC**
To	In tonnes					In tonnes				
Landfilling	0.00	0.00	0.00	0.00	**0%**	0.33	2.47	2.94	5.62	**9%**
Incineration	0.04	0.27	0.35	0.67	**6%**	0.25	1.82	2.19	4.20	**7%**
Recycling	0.67	4.59	6.00	11.49	**94%**	3.19	22.67	28.96	55.45	**84%**

Table S13: Weighted sums of coefficients of variation associated with the waste management data

Country	nano-Ag			CNT		
	Landfilling	Incineration	Recycling	Landfilling	Incineration	Recycling
Austria	7%	8%	9%	5%	6%	9%
Belgium	16%	16%	13%	15%	15%	15%
Bulgaria	20%	13%	19%	10%	9%	20%
Croatia	16%	8%	18%	12%	12%	11%
Cyprus	20%	8%	21%	9%	6%	25%
Czech Republic	37%	37%	38%	14%	14%	38%
Denmark	15%	16%	11%	15%	15%	15%
Estonia	15%	16%	16%	15%	15%	13%
Finland	13%	13%	14%	15%	15%	18%
France	31%	31%	30%	15%	15%	18%
Germany	22%	22%	20%	8%	8%	18%
Greece	25%	16%	26%	21%	21%	38%
Hungary	37%	38%	38%	15%	15%	18%
Ireland	22%	23%	23%	19%	15%	31%
Italy	15%	16%	14%	8%	7%	20%
Latvia	30%	31%	31%	21%	21%	38%
Lithuania	37%	16%	38%	16%	17%	25%
Luxembourg	15%	16%	16%	15%	15%	18%
Malta	25%	16%	26%	21%	15%	38%
The Netherlands	15%	16%	16%	15%	15%	18%
Norway	22%	22%	23%	19%	19%	31%
Poland	37%	38%	38%	19%	15%	31%
Portugal	31%	31%	30%	15%	15%	18%
Romania	22%	22%	22%	15%	15%	18%
Slovakia	37%	38%	38%	21%	21%	38%
Slovenia	37%	38%	30%	19%	19%	29%
Spain	15%	16%	16%	15%	15%	18%
Sweden	31%	31%	32%	21%	21%	38%
Switzerland	8%	9%	9%	21%	21%	29%
United Kingdom	15%	16%	14%	19%	19%	31%

Table S13 (continued): Weighted sums of coefficients of variation associated with the waste management data

Country	nano-TiO_2			nano-ZnO		
	Landfilling	Incineration	Recycling	Landfilling	Incineration	Recycling
Austria	11%	13%	13%	4%	10%	10%
Belgium	20%	21%	15%	12%	18%	10%
Bulgaria	13%	13%	15%	4%	10%	10%
Croatia	12%	13%	13%	4%	10%	10%
Cyprus	13%	13%	15%	4%	10%	10%
Czech Republic	38%	39%	41%	35%	40%	40%
Denmark	36%	38%	38%	34%	40%	40%
Estonia	19%	20%	13%	12%	18%	10%
Finland	19%	20%	20%	12%	18%	17%
France	19%	20%	20%	12%	18%	17%
Germany	12%	13%	14%	4%	10%	10%
Greece	21%	22%	17%	12%	18%	10%
Hungary	19%	20%	14%	12%	18%	10%
Ireland	21%	20%	22%	12%	18%	18%
Italy	12%	13%	14%	4%	10%	10%
Latvia	39%	40%	41%	35%	41%	40%
Lithuania	19%	20%	20%	12%	18%	17%
Luxembourg	19%	20%	14%	12%	18%	10%
Malta	39%	21%	41%	35%	18%	40%
The Netherlands	19%	20%	20%	12%	18%	17%
Norway	38%	39%	39%	35%	41%	40%
Poland	21%	20%	22%	12%	18%	18%
Portugal	19%	20%	20%	12%	18%	17%
Romania	38%	39%	39%	34%	40%	40%
Slovakia	39%	40%	41%	35%	41%	40%
Slovenia	39%	40%	40%	35%	41%	40%
Spain	36%	38%	38%	34%	40%	40%
Sweden	39%	40%	41%	35%	41%	40%
Switzerland	39%	40%	40%	35%	41%	40%
United Kingdom	39%	40%	40%	35%	41%	40%