Method of Calculation in the Member States of the Financial Guarantee and Equivalent Insurance pursuant to Art. 6 of Regulation (EC) No 1013/2006 on shipments of waste

- A Compilation Document -

September 2016

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1. INTRODUCTION

In 2010, a Commission study was conducted to provide an analysis and to assess the practices in the Member States with regard to the financial guarantee or equivalent insurance as set out in Article 6 of Regulation (EC) No 1013/2006 on shipments of waste. The results of this study are summarised in a report which is published on the Commission's website[1]. Table 4-1 of this report provides an overview of the various formulas applied for the calculation of the financial guarantee or equivalent insurance in the Member States.

Following the work of this study, the correspondents pursuant to Article 54 of Regulation (EC) No 1013/2006 on shipments of waste (WSR), agreed that there is no need to develop a common European method for the calculation of the financial guarantee or equivalent insurance. However, the correspondents agreed that the methods of calculation of the financial guarantee or equivalent insurance in all Member States be compiled in one single document that would provide some transparency on the issue. This document compiles the information submitted by the Member States to the Commission and represents the state of play as regards the method for calculating the financial guarantee or equivalent insurance at national level at the time of compilation of this document.

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1 See http://ec.europa.eu/environment/waste/shipments/pdf/report_d-2-1-4.pdf

2. AUSTRIA

The following formula is used for the calculation of the financial guarantee:

$$G = (trans + treat + store) \times quantity$$

G:	financial guarantee
trans:	transport costs per ton + VAT
treat:	treatment costs (D- or R-operation) per ton + VAT
store:	storage costs for 90 days per to + VAT
quantity:	total quantity of waste notified
VAT:	value added tax of the respective country, where the financial guarantee is laid down.

Storage costs (for 90 days): The following values shall be used, or alternatively an individual offer may be made at a price valid for the Ministry of the Environment.

Waste type	Storage costs (€/ton)
Non-hazardous wastes	40
Hazardous wastes	150

Transport costs: (one way) in km in accordance with the notification: As a rough estimate, the figure of 0,10 €/ton/km may be used (e.g. the costs for the transport of one ton of waste at a distance of 800km would be 80 €). Alternatively, the transport costs can be made through a presentation of an offer.

Treatment costs: In general, the costs for waste recovery or disposal depend on the specific waste stream and are calculated on the basis of the official price lists of the Austrian waste treatment facilities. When the waste being shipped has a positive net value, meaning that it could be sold for treatment with a net profit, the treatment costs in the calculation can be set to zero.

Shipments destined for interim disposal/recovery operations

Interim operations are R12, R13, D13, D14, D15 according to the Waste Shipment Regulation (EC) No 1013/2006. However from the technical point of view sometimes even other operations such as D9 might be a pre-treatment operation, which is necessary for the subsequent final disposal operation (e.g. stabilization/solidification of wastes prior to landfilling).

In case of shipments destined for an interim recovery or disposal operations (i.e. R12, R13, D13, D14, D15), the establishment of a supplementary financial guarantee or equivalent insurance by the consignee covering the said shipment until completion of the non-interim recovery or disposal may be required. It is noted that from the technical point of view, sometimes even other operations such as D9 may be considered as a kind of interim or pre-treatment operation prior to a subsequent final operation (e.g. stabilization/solidification of wastes prior to landfilling). In this case the **first guarantee** should cover the transport costs up to the interim operation and the costs of the alternative final treatment, as well as the transport costs from the location of the sender of the wastes to the consignee, carrying out the interim operation. The **supplementary guarantee** could cover the final treatment costs and the transport costs from the location of the operator of an interim operation to the final consignee, carrying out the final recovery or disposal operation. If no supplementary financial guarantee or equivalent insurance is provided, the financial guarantee shall cover the costs of the alternative final treatment (and if necessary, the pre-treatment costs), as well as the transport costs from the location of the sender of the wastes to the consignee, carrying out the final recovery or disposal operation.

Remark: After the performance of some interim operations (e.g. mixing and blending, solidification) the physical and chemical characteristics of the waste change and do not correlate with the original notification any more, the interim facility is a producer of new wastes and an additional financial guarantee for the final disposal/recovery of these newly generated wastes, which are not mentioned on the original notification form, cannot easily be calculated in practise. **Therefore it seems to be appropriate to calculate the complete financial guarantee for the notified waste, covering the costs of the final disposal/recovery operation and if necessary, pre-treatment steps all at once.**

Formula for shipments destined for interim operations:

$$G = (\text{trans}_{AC} + \text{treat}_{C(+B)} + \text{store}) \times \text{quantity}$$

G	financial guarantee
trans	transport costs per ton + VAT
treat	treatment costs (of final D- or R-operation plus, if necessary, the pre-treatment costs such as shredding, sorting) per ton + VAT
store	storage costs for 90 days per to + VAT
quantity	total quantity of waste notified
VAT	value added tax of the respective country, where the financial guarantee is laid down.

A	Facility of dispatch
B	Facility, where the interim operation takes place
C	Facility, where final operation takes place
AC	Distance between A and C **via the location of the interim facility B** in km

3. BELGIUM

3.1. Flanders and Brussels Capital Region

The formula used for the determination of the financial guarantee [FG] is as follows:

a) For non-hazardous waste with destination in OECD zone :
FG = Total amount of waste material [ton] * 2 EUR, with a minimal amount of 1200 EUR
b) For hazardous waste with destination in OECD zone :
FG = Total amount of waste material [ton] * 8 EUR, with a minimal amount of 4800 EUR
c) For non-hazardous waste with destination out OECD zone :
FG = Total amount of waste material [ton] * 4 EUR, with a minimal amount of 2400 EUR
d) For non- hazardous waste with a departure out OECD zone, import EU zone :
FG = Total amount of waste material [ton] * 4 EUR, with a minimal amount of 2400 EUR
e) For hazardous waste with a departure out OECD zone, import EU zone :
FG = Total amount of waste material [ton] * 16 EUR, with a minimal amount of 9600 EUR

3.2. Wallonia

Pursuant to article 6 of Regulation 1013/2006/CE, the competent authority of dispatch approves the financial guarantee or equivalent insurance, including the form, wording and amount of the cover.

To determine the amount of the financial guarantee, the Walloon Waste Office uses the following calculation method:

$$FG = (A + B + C) \times D \times (E/F + 1) \times 1.2$$

Where,
A = processing costs/ton (€/ton)
B = transportation costs/ton = 0.1 €/(km x ton) x kilometers (km) (€/ton) C = fixed amount for the storage of waste during 90 days (€/ton)
C = storage costs (see values in table below)

Value of C in the formula			
Waste	C (€)	Waste	C (€)
Hazardous waste Indoor storage	140	Hazardous waste Outdoor storage	70
Non-hazardous waste Indoor storage	70	Non-hazardous waste Outdoor storage	35

D = maximum quantity of waste per single shipment (in tons)
E = time to complete the process (in days)
F = time between two shipments (in days)

For instance: notification BE XXXX XXXXXX

For 13 shipments (a total of 250 tons) over a period of one year (365 days)

Using the Walloon calculation method, the amount of the financial guarantee is:

FG = (425 €/ton + 52 €/ton + 140 €/ton) x 19,23tons x (90d/28,0769d + 1) X 1,2 = 59.877,16 €

Where,
F = time between two shipments = 365 days/13 shipments = 28,0769 days between two shipments

4. BULGARIA

Implementation of Art. 6 of Regulation (EC) No 1013/2006 on shipments of waste Provisions on the financial guarantee or equivalent insurance are laid down in the Waste Management Act, prom. SG No 53/13.07.2012, effective 13.07.2012

Art. 96 (2) Where a financial guarantee or equivalent insurance pursuant to Article 6 of Regulation (EU) No 1013/2006 is required, it shall be in the form of bank guarantee or insurance policy.
 (3) For shipments of waste to the Republic of Bulgaria for interim recovery operations the financial guarantee or equivalent insurance shall cover the costs until issue of the certificate in accordance with Article 15(e) of Regulation (EU) No 1013/2006.
 (4) For shipments of waste to the Republic of Bulgaria for final recovery operations the financial guarantee or equivalent insurance shall cover the costs until issue of the certificate in accordance with Article 16(e) of Regulation (EU) No 1013/2006.
 (5) In case of a general notification under Article 13 of Regulation (EU) No 1013/2006 for shipments from the Republic of Bulgaria it shall be admissible to present a partial financial guarantee or equivalent insurance covering part of the general notification under the conditions referred to in paragraph 8.
 (6) Where the financial guarantee under Article 6 of Regulation (EU) No 1013/2006 is in the form of a bank guarantee, the bank guarantor shall undertake irrevocably, unconditionally and upon first written demand by the Minister of Environment and Water to transfer the amount under the bank guarantee to the benefit of and to an account of the Ministry of Environment and Water. The bank guarantee shall be unconditional and irrevocable and shall be issued by a foreign bank or a commercial bank as referred to in Article 2, paragraph 5 of the Credit

Institutions Act licensed by the Bulgarian National Bank for guarantee transactions. The bank guarantee issued by a foreign bank must be advised through a Bulgarian bank.

(7) The insurance policy referred to in paragraph 2 shall be issued by an insurance company holding a license issued according to the procedure established by the Insurance Code. The said insurance policy shall include a stipulation on payment of the full amount of the sum under the insured event to the benefit of the Ministry of Environment and Water upon first written demand.

(8) As many shipments as are covered by the partial financial guarantee or equivalent insurance may be dispatched. In such a case each any subsequent shipment may be dispatched after the competent authority under Article 95, paragraph 2 has received the certificate referred to in Article 15(e) or Article 16(e) of Regulation (EU) No 1013/2006

Further requirements are laid down in the Ordinance on *the procedure and order for calculating the amount of the financial guarantee or equivalent insurance and the submission of annual records for transboundary shipments of waste, Prom. S.G. 59/18.07.2014*. According to this ordinance, the amount covered by the financial guarantee is to be calculated on the basis of the following calculation formula, however this cannot be less than 2000 BGN (equal 1000 Euro) per ton:

FG = Costs (Transport) + Costs (Treatment depending on the type of waste and the kind of treatment) + Costs (Storage for 90 days) x Total Waste Quantity) >= 1000 Euro/ton

5. CROATIA

Article 31. of an Ordinance on waste management (OG No. 23/14, 51/14) has prescribed:

$$FG = N_*(C_T + C_{DR} + C_S)_*1,2$$

Where,

FG = Financial Guarantee (bank guarantee or an equivalent insurance)

N = amount of waste shipped (T),

C_T = Cost for transport per tonne,

T_{ZO} = Cost for disposal or recovery (including interim storage) per tonne

C_S = Costs for storage over a period of 90 days per tonne

1,2 = safety factor for the take-back transport costs, the treatment operation, the storage

Template financial guarantee
Ministry of Environmental and Nature Protection
Radnička cesta 80
10000 Zagreb

LETTER of GUARANTEE to
Notification No.

Notification No.

This Guarantee of Payment commissioned on behalf of[1) 2)]

....

Name and address of the commissioner

for the notifier

in favour of the Ministry of Environmental and Nature Protection serves for securing payments in accordance with Article 6 of the Regulation (EC) No. 1013/2006 of the European Parliament and of the Council dated 14 June 2006 on shipments of waste (EC Waste Shipment Regulation).

In accordance with the Regulation mentioned above

takes over all liabilities towards the Ministry of Environmental and Nature Protection which were incurred by the notifier regarding the shipment of waste according to the following code(s) of the European Waste Catalogue (EWC):

and the following code according to the EC Waste Shipment Regulation:

to the facility

up to a maximum amount of

According to that

commits itself to transfer the sum mentioned above within three days after receipt of the written request by the Ministry of Environmental and Nature Protection waiving from any demurs and without examining the legal relationship. The payment of the sum requested shall be effected by means of bank transfer to the account of the requesting office. Payment by cash shall not be accepted.

This guarantee may only called upon following a corresponding written request by the Ministry of Environmental and Nature Protection bearing the seal and the account number as well as the bank, to which the transfer shall be made.

The

Name of the court of jurisdiction

is the respective court of jurisdiction for any legal disputes which may arise from this contractual relationship.

This guarantee obligation shall be valid until the original document of this Letter of Guarantee is returned by the Ministry of Environmental and Nature Protection or until a confirmation by the Ministry of Environmental and Nature Protection is available in which the authority confirms that the guarantee will no longer be used.

Date, seal an signature of the financial institute

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1) *Only fill in, if commissioner and notifier are not the same person*
2) *Please delete if not appropriate*

6. CYPRUS

The following formula is used for the calculation of the financial guarantee:

$$\textbf{FG = (TRNS + TREAT + STORE) x Q}$$

Where,
FG = Financial Guarantee
TRNS = Transport Costs (€/ton + VAT)
TREAT = Treatment Costs (D- or R-operation) (€/ton + VAT)
STORE = Storage Costs for 90 days (€/ton + VAT)
Q = Maximum Quantity of Waste per Movement (tons)
VAT = value added tax of the respective country, where the financial guarantee is laid down.

7. CZECH REPUBLIC

The method of calculation of bank guarantee or equivalent insurance is stipulated in national legislation (Waste Managment Act No. 185/2001 Coll., Annex 11).

The following formula is used:

$$\textbf{Z = M} \times \textbf{(T + A + S)}$$

Where,
T = costs of transport (per tonne)
A = costs of alternative recovery or disposal (per tonne)
S = storage costs for 90 days (per tonne)
M = quantity of waste (t)

Terms T, A, S:
The guarantee is calculated by the competent authority. Calculation formula for transport costs includes constants introduced on account of very short transport distances and/or extended transport distance (e.g. for subsequent alternative non-interim recovery / disposal). Costs of alternative recovery / disposal and storage for 90 days depend on characteristic of the waste in question and are laid down in the Waste Management Act.

$T = 10 + 0,1 \times (LS + 500)$ $(€ / t)$
LS = one-way transport distance (km)
10 = constant $(€ / t)$
500 = constant (km)
$A = 1\,500 - 250\,000\ CZK / t\ \rightarrow (€ / t)$
$S = 1\,000 - 8\,000\ CZK / t\ \rightarrow (€ / t)$

However, if the notifier submits documentation proving that lower costs of alternative recovery / disposal are contractually agreed the competent authority may accept the figure provided by the notifier.

Term M:
The calculation is made either for the whole quantity notified or, more frequently, a partial guarantee covering only the active shipments is calculated. The notifier can propose and justify the quantity of the active shipments covered by the guarantee. If accepted the competent authority then has to check whether the quantity covered by guarantee is not exceeded during the shipments.

Duration of the financial guarantee:
Typically the financial guarantee shall be valid at least 16 months after the date the notification expires.

8.   DENMARK

In Denmark a financial guarantee of 3,000 DKK (Danish Kroner) per ton of waste to be shipped must be provided. The guarantee covers the following:
- Cost of transport from the original treatment facility in the country of destination to an alternative treatment facility.
- Cost of storage for 90 days
- Cost of recovery or disposal at the alternative treatment facility.

Reduction of the financial guarantee

It is possible to apply for a reduction of the financial guarantee pr. ton. When applying the following information has to be forwarded to the Danish Environmental Protection Agency:
- Request for the reduction of the financial guarantee pr. ton.
- Appendix with calculation of the financial guarantee pr. ton.
- Copy of an alternative offer regarding cost of transport from the original treatment facility in the country of destination to an alternative treatment facility.
- Copy of an alternative offer regarding cost of storage for 90 days
- Copy of an alternative offer regarding cost of recovery or disposal at the alternative treatment facility

The forwarded calculation for the financial guarantee has to be explicit and include all cost including taxes and VAT. The following has to be stated in the attached offer:

- what amount in tons the offer is valid for
- the total costs
- the currency
- VAT
- taxes

The alternative offer must come from a company who is not party to the notification process.

The alternative offer must not be more than a year old.

Increase of the financial guarantee

The Danish EPA can, if the cost deviates significantly from DKK 3.000, demand an increase of the financial guarantee.

The rules concerning the calculation of the financial guarantee can be found in the Danish Statutory Order no. 132 of 6 February 2014 on shipments of waste and shipments of used electrical and electronic equipment, as follows:

"Financial guarantee
6.-(1) When Denmark is the country of dispatch for shipments of waste for which notification is required under the Regulation, the notifier or another natural or legal person on his behalf shall provide a guarantee of DKK 3,000 per tonne of waste to be shipped in accordance with the notification.
(2) If the Danish EPA deems that the expected costs of transport, disposal, recovery and storage will deviate materially from the amount specified in subsection (1), the Agency may decide that the guarantee shall constitute a larger or smaller amount than that specified in subsection (1).

7.-(1) The following shall be accepted as a financial guarantee:
1) Bank guarantee issued by a bank;
2) Guarantee issued by a guarantor company;
3) Cash deposit in a blocked bank account.
(2) The Danish EPA may approve another type of guarantee.

8.-(1) A guarantee under the Regulation shall quote the serial number of the notification and shall be provided with a clause to the effect that it cannot be released until the Danish EPA has received the certificate referred to in Article 6(5) or Article 6(8) of the Regulation.
(2) For shipments of waste destined for interim recovery or disposal, where further recovery or disposal takes place in the country of destination, the guarantee may, however, be provided with a clause so that it can be released when the waste leaves the facility carrying out the interim operation and the Danish EPA has received the certificate referred to Article 6(6) of the Regulation.
(3) The guarantee shall also set out clearly that it must be paid to the Danish EPA in the event that the Agency deems that the Danish state or other authorities concerned have to meet the obligations arising under Articles 23 and 25 of the Regulation.

(4) The guarantee shall be issued to the Danish state, c/o Environmental Protection Agency, Strandgade 29, DK-1401 Copenhagen K.

(5) The guarantee shall be valid at the time of notification. A separate guarantee shall be issued for each notification.

Further information can be found at: http://eng.mst.dk/topics/waste/shipments-of-waste/

9. ESTONIA

The Estonian Environmental Board accepts as financial guarantee a bank deposit, a blocked account or an insurance.

Formula:

$$A = (b + c + d) * e$$

Where,

A = Amount of Guarantee (EUR)

b = cost for transport, one way (€/t). *The transport costs are based on the information from the notifiers; the offers that they have received from the transport companies.*

c = cost for 90 days storage (€/t). *Storage costs are based on harbour storage either in or outside of IMO-fields.*

d = cost for alternative treatment of the waste (€/t) *The cost of the alternative treatment is decided case by case based on the costs of proper waste treatment in Finland e.g. landfill, hazardous landfill, hazardous waste treatment plant. The cost for alternative treatment can be ignored if the waste referred has high positive value.*

e = quantity of waste (t) *Quantity of waste can either be the whole quantity notified or a part of it.*

Usually the guarantee covers only part of the quantity notified. The notifier has to decide how much waste is shipped at one time (till the certificate of recovery/disposal is given) and has to cover that amount of waste by a financial guarantee.

A guarantee may also cover several notifications. Compliance with the coverage conditions of the guarantee is followed-up promptly via the pre-notifications and certificates of recovery or disposal. If the quantity covered by the guarantee is exceeded, a pre-notified shipment will be stopped.

Validity of the guarantee

The guarantee has to be valid for 16 months after the intended last shipment. This period is based on an estimate of one month transport time, one year time for waste treatment and receiving the certificate of recovery or disposal and an additional three months for any measures to be taken for a possible return of the shipment.

Accepting and returning the guarantee

The financial guarantee is accepted during the notification procedure.

If the financial guarantee is in the possession of the Estonian Environmental Board, it will be released and returned at request of the notifier, after receival of the necessary certificates of disposal or recovery.

10. FINLAND

The Finnish Environment institute accepts as financial guarantee a bank deposit, a blocked account or an insurance. So far, the most commonly used bank guarantee type has been irrevocable and unconditional On-demand-guarantees, for which a sample text is available for notifiers. For shipment from outside the EU, also similar texted Confirmed Letters of Credit (conformation through an approved Finnish bank) have commonly been used. In case of insurances, these will only be accepted if issued in form of an irrevocable and unconditional On--demand guarantee with reference to the Uniform Rules for Demand Guarantees (ICC-Publ. Nr. 758).

Formula:

$$A = (b + c + d) * e$$

Where,

A = <u>Amount of Guarantee (EUR)</u>

b = <u>cost for transport, one way (€/t).</u> *The transport costs are based on the information from the notifiers; the offers that they have received from the transport companies.*

c = <u>cost for 90 days storage (€/t).</u> *Storage costs are based on harbour storage either in or outside of IMO-fields.*

d = <u>cost for alternative treatment of the waste (€/t)</u> *The cost of the alternative treatment is decided case by case based on the costs of proper waste treatment in Finland e.g. landfill, hazardous landfill, hazardous waste treatment plant. The cost for alternative treatment can be ignored if the waste referred has high positive value.*

e = <u>quantity of waste (t)</u> *Quantity of waste can either be the whole quantity notified or a part of it.*

Usually the guarantee covers only part of the quantity notified. The notifier has to decide how much waste is shipped at one time (till the certificate of recovery/disposal is given) and has to cover that amount of waste by a financial guarantee.

A guarantee may also cover several notifications. In the decision to the notification or in the separate Certificate of Satisfaction we tell the maximum amount of waste in tonnes which under this or any other notification connected to this financial guarantee is allowed to be shipped at any one time. Compliance with the coverage conditions of the guarantee is followed-up promptly via the pre-notifications and certificates of recovery or disposal using our electronic register for transfrontier shipments of waste. If the quantity covered by the guarantee is exceeded, a pre-notified shipment will be stopped.

Validity of the guarantee

The guarantee has to be valid for 16 months after the intended last shipment. This period is based on an estimate of one month transport time, one year time for waste treatment and receiving the certificate of recovery or disposal and an additional three months for any measures to be taken for a possible return of the shipment.

Accepting and returning the guarantee

The financial guarantee is accepted during the notification procedure, which we prefer or in accordance with the regulation by making a separate decision of the acceptability of the guarantee at the latest about two weeks before the first shipment starts.

If the financial guarantee is in possession of the Finnish Environment Institute, it will be released

and returned on request of the notifier, after we have received the necessary certificates of disposal or recovery.

11. FRANCE

The French ministerial Order ("Arrêté ministériel") of 13 July 2011 on the conditions for the establishment of the financial guarantee specifies the calculation method of its amount. Models of documents certifying the financial guarantees are annexed to the ministerial Order (annexes I.1 and I.2). This text makes a distinction between the case of a separate coverage of each shipment of a general notification and the case of a single coverage for all notified shipments (cf. Article 6 and Article 13 of the WSR). The Annexes II-1 to IV-2 of the "Order" relate to the calculation method of financial guarantees for each of the possible scenarios (export, import, single shipment, multiple shipments).

The formula used in France to calculate the financial guarantee is as follows :

$$GF = (CT+CTR+CS) \times Q \times 1.2$$

where,

  GF = financial guarantee

  CT = cost of transport

  CTR = cost of treatment

  CS = cost of storage for 90 days on the territory of destination

  Q = average amount

A factor of 1.2 is applied to take into account the analyses to do, the trips to expect, the evolution of the costs between the time where the file (the notification document and the others information) is submitted and the time where the financial guarantee will be implemented, the exchange rate, etc.

Cost of transport (CT)

The cost of transport is determined with the unit cost based on the distance and the weight (C1, in € / km / tonne), the amount of waste (Q) and the distance (D) (km) from the place of departure to the destination:

$$CT = C1 \times D \times Q$$

Costs can vary depending on the mode of transport (road transport, shipping, etc.). When different modes are used, a quote by mode of transport must be provided (copy of the travel contracts showing the amounts) except in the case of brokers.

Cost of treatment (CTR)

The waste treatment cost reflects the estimated costs of a disposal or recovery operation, including those of an interim operation. Although they can depend on the market and the specific national circumstances, the costs of waste treatment operations are mainly related to the process of treatment as such. In the case of export out of the EU / EFTA / OECD, treatment costs can

vary significantly. This is why the amount should be based on the costs practiced in France (a quote of a French facility of treatment located near the place of departure).

Cost of storage (CS)

The cost of storage is to be taken into account in the calculation. This is the estimated cost of storage for 90 days in the territory of destination.

Amount in case of a general notification

In the case of a financial guarantee for all shipments of a general notification, the costs of transport, treatment and storage are based on the active amount, defined as the maximum amount of waste in circulation, i.e. since the departure of the waste until the receipt by the competent authority of the document which certifies that the disposal/recovery of waste has been completed.

12. GERMANY

Amount of the financial guarantee:
The competent authority is to determine the amount of the financial guarantee at its own discretion, with recourse to past values. For this purpose, the following calculation method is recommended, which uses what are termed specific costs for transport, recovery or disposal, and storage:

$$FG = (CT * D * ST + CRD * SRD + CS * SS) * M$$

Where,

FG	=	Amount of the bank guarantee or equivalent insurance [€]
CT	=	Return transport costs per km, per tonne [€/(km * t]
CRD =		Recovery or disposal costs per tonne [€/t]
CS	=	Costs of storage for 90 days per tonne [€/t]
D	=	Distance [km]
M	=	Quantity of waste [t]
ST	=	Safety factor for return transport (1.0 to 1.3)
SRD	=	Safety factor for recovery/disposal (1.0 to 1.3)
SS	=	Safety factor for storage (1.0 to 1.3)

The actual costs can only be ascertained on a case-by-case basis with due regard for the nature and hazardousness of the waste, particularly in the case of an illegal shipment.
For this reason, the waste which is the subject of a shipment notification is generally used as the starting point for the calculation. Experience has shown that the aforementioned safety factors (ST, $S_{RD,}$ SS) for the respective costs generally cover such unknown variables – cf. in particular nature and hazardousness. Average specific costs may also be used for the calculation, to avoid having to re-examine the costs for every subsequent or new notification concerning similar waste. Please note that a quote – in relation to the recovery or disposal costs – in which the recovery or disposal operation is offered at a price significantly below the average costs can only be accepted as a basis subject to the submission of a binding declaration. In this declaration, the recovery or disposal company should undertake to guarantee the quoted prices and acceptance of the specified quantity until such time as the financial guarantee is released.

Below, guidance for calculating the relevant costs is provided.

Transport costs (CT) and safety factor (ST):
The cost of return shipment per kilometre, per tonne can only be calculated with due regard for the waste type and the transport conditions required. For example, the calculation could be based

on the transport costs for outward transport, plus a safety factor of 10-30%. Alternatively, the average costs per tonne for return transport may be used; this is probably the most common case, so that the distance (D) may be omitted from the above calculation formula.

Distance (D):

If the distance has not already been taken into account in the aforementioned transport costs per tonne, and if no concrete information regarding the distance is available, then the approximate distance should be used, where applicable with a safety factor.

Recovery or disposal costs (C_{RD}) and safety factor (S_{RD}):

The cost of the non-interim recovery or disposal should be ascertained with due regard for the waste type and constituents as well as the required recovery or disposal operation. These are subject to market-related variations, and often characterised by numerous premiums (e.g. low calorific value or special constituents).

The costs of "any necessary interim operation" cited under the recovery or disposal costs should be confined to those costs which are necessary for proper recovery or disposal, including any required repackaging etc. These costs may be covered by calculating a safety premium of up to 30 %. Farther-reaching measures are impossible to calculate in practice, since these would have to be known in advance, i.e. when calculating the financial guarantee. Generally, the goal should be to aspire towards return with direct recovery or disposal.

Storage costs for 90 days (C_S) and safety factor (S_S):

In accordance with Articles 22 and 24, the waste must be returned within 90 or 30 days of notification, respectively, or within another period of time to be unanimously specified by the authorities.

The storage costs can likewise only be ascertained with due regard for the nature and hazardousness of the waste. When calculating the financial guarantee, it is sufficient to use as a basis the average costs of interim storage in relation to the notified waste and the maximum period of 90 days, plus a safety premium of up to 30%.

The storage costs determined in this way, including the safety factor, should cover the storage costs for the cases pursuant to Article 22 (9) and Article 24 (7) from the date on which the competent authority of dispatch was informed through to the date of return (cf. Article 23 (1) and Article 25 (1)).

Quantity of waste (M):

The total quantity of waste is derived from the notification document. In the case of general notifications, in accordance with Article 6 paragraph 8, sub-quantities may be used as a basis for calculation rather than the total quantity. The competent authority determines the sub-quantities in consultation with the notifier. However, this method requires the certificate of recovery or disposal to be available for every sub-quantity shipped, so that the financial guarantee may be transferred to the next sub-quantity.

The hitherto common practice in Germany of partial financial guarantees (specification of a single partial financial guarantee with the proviso that waste may only be shipped within the context of the difference between the sub-quantity covered by the partial financial guarantee and the sum total of quantities already shipped for which recovery or disposal certificates are not yet available) is also consistent with Article 6 paragraph 8.

For further information in German, see Section 3.1.3.1 under: http://www.laga-online.de/servlet/is/23874/M25_VH_Abfallverbringung.pdf?command=downloadContent&filename=M25_VH_Abfallverbringung.pdf

13. GREECE

[missing information]

15. IRELAND

The Irish National TFS Office (NTFSO) uses a formula for calculating the amount of the financial guarantee, based on the costs involved in respect of an individual shipment, as follows:

The value of an average bond is calculated using the formula:

$$[(a + b + c) \times d]$$

Where,

a = <u>Transport costs</u>: Costs for transporting one shipment of waste between the points of despatch and destination both ways, including, shipping, carriage, and harbour costs;

b = <u>Recovery/Disposal costs</u>: Costs based on the estimated cost of the recovery/disposal operation in respect of one shipment;

c = <u>Storage costs</u>: Costs cover storage for up to 90 days, and any additional administrative or legal costs incurred by the competent authorities;

d = <u>Number of active shipments</u>: Costs arising according to the number of active shipments covered in the guarantee which increases its value.

Notifiers are required to calculate the bond value based on our financial guarantee formula. The calculations are checked by the NTFSO for accuracy and the value is assessed for adequacy. A distinction is made between the two parties involved and their respective obligations: the notifier/exporter who is required to establish the guarantee/insurance; and the competent authority of dispatch who is responsible for approving the bond, including the form, wording and amount of the cover.

Based on this formula, the NTFSO is satisfied that the value of the financial guarantee or equivalent insurance would be adequate and valid to cover costs arising where a notified shipment or the recovery or disposal cannot be completed as intended or is illegal. The cost for processing by the NTFSO a financial guarantee submitted in a notification application is included in our TFS notification administrative fee.

The NTFSO is of the view that variable cost factors and market conditions must be taken into account for calculating a financial guarantee. In practice, the individual nature of waste shipments means that the value of financial guarantees would be expected to vary based on the transport, treatment and storage costs applying at a particular time.

16. ITALY

In accordance with the National Decree 370/1998 the financial guarantee is calculated as follows:

$$G = T \text{ (Transport)} + S \text{ (Disposal / Recovery + Storage)}$$

Where,

G = Financial Guarantee (€)

T = Transport Costs = Km x Tonnes x 300 (300 is a constant value €/Km/Tonne)

S = Disposal /Recovery /Storage = Tonnes x K2

Where K2 is a parameter in €/Tonne, with values as follows:

Treatment	Type of waste	Value for K2
Recovery	Any type	2.000.000 Lire/Tonne $\rightarrow$ about 1.000 €/Tonne
Disposal	Non-hazardous waste	2.000.000 Lire/Tonne $\rightarrow$ about 1.000 €/Tonne
	hazardous wastes containing halogenated organics at levels below 5.000 ppm	4.000.000 Lire/Tonne $\rightarrow$ about 2.000 €/Tonne
	hazardous wastes containing halogenated organics at levels higher than 5000 ppm	8.000.000 Lire/Tonne $\rightarrow$ about 4.000 €/Tonne

17. LATVIA

The financial guarantee requirements and calculation is based on Article 6 of Regulation 1013/2006.

The formula that we use in Latvia for calculating the financial guarantee is as follows:

$$FG = (C_T + C_{R/D} + C_S) \times M$$

FG – amount of financial guarantee or equivalent insurance (*euro)*

C_T – the cost for transport from notifier to facility/alternative facility (*euro*/t)

$C_{R/D}$ – the cost for recovery or disposal (*euro*/t)

C_S – the cost for 90 days storage (*euro*/t)

M – quantity of waste in active shipments

18. LITHUANIA

The total amount of the financial guarantee or equivalent insurance is:

$$(T \times (A1 + A2) + P + 90 \times L) \times Q \times 1.1$$

Where,

T: costs of 1 ton shipment for 1 km (EUR);

A1:   the distance of transportation from the notifier to the consignee (km);

A2:   the distance of transportation from the notifier to the alternative waste management facility where waste could be disposed of or recovered in an environmentally sound manner (km);

P: costs of 1 ton of waste for alternative use or disposal in an environmentally sound manner (EUR/ton), in case the waste has a positive market value then P = 0;

L: costs of storage per 1 ton of waste per day in an environmental sound manner at an alternative waste management facility (EUR);

Q: planned   amount   of   waste   for transportation (tonnes);
1.1:   coefficient to take account of additional costs.

19. LUXEMBOURG

The formula applied in Luxembourg is the following:

$$A = (a + b + c) \times d \times h \times 1{,}2$$

Where,

A	amount of the financial guarantee [Euro]
a	treatment costs [Euro/t]
b	transport costs [Euro/t]
c	storage costs [Euro/t]
d	maximum amount of waste per financial guarantee [t]
h	factor: $h = g + 1$
g	factor: $g = e \times f$ (rounded down)
e	treatment time [day]
f	number of transports per day [1/day]

The following table indicates the value of c in the formula:

Storage types and wastes	c [Euro/t]
in-house storage of hazardous waste	140.-
in-house storage of non hazardous waste	70.-
outside storage of hazardous waste	70.-
outside storage of non hazardous waste	35.-

The amounts of the table are fixed in national legislation and are applicable for national and transfrontier shipments.

The text of the law is available in the following link:
http://www.environnement.public.lu/dechets/dossiers/transfert_dechets/memorial_A_223_2007.pdf

20. MALTA

The amount of the financial guarantee or equivalent insurance is calculated using the formula:

$$FG = N\,[3(SH + ST) + T\,(Q)]$$

Where,

N : Number of active shipments
SH : Cost of shipment from the waste generator to the receiving facility
ST : Cost of storage for 90 days at the first port of call
T : Cost of treatment (per tonne)
Q : Quantity of waste (tonne)

The cost of shipment from the waste generator to the receiving facility together with the cost of storage for 90 days at the first port of call is multiplied by three since Malta would like to ensure that there are enough funds to take back the shipment in case something goes wrong with

the shipment whilst ensuring that there are enough funds to carry out the re-shipment to another facility following the procedures of the Waste Shipments Regulations.

21. NETHERLANDS

The financial guarantee has to cover the amount of waste that is shipped at one time and not yet processed. That means that at least one shipment has to be covered by the financial guarantee. If the notifier wants to do more shipments at one time – which implies that the waste of the shipments is not yet processed - he has to set a financial guarantee that covers the amount of waste transported with these shipments at the same time up to the moment the consignee provides the certificate of disposal/recovery for the waste. The financial guarantee (or a part of the financial guarantee) for a shipment becomes available again for other shipments at the moment the certificate of disposal/recovery is given by the consignee. So the notifier may but is not obliged to set a financial guarantee that covers the total amount of waste mentioned in block 5 of the notification. The notifier has to decide how much waste is shipped at one time (till the certificate of recovery/disposal is given) and has to cover that amount of waste by a financial guarantee.

Example: A notifier wants to ship waste under code Y46. The fixed rate for Y46 is 125 euro per ton for treatment. The waste is solid, thus 15 euro per ton for storage. The waste is shipped 200 km by truck from the notifier to the facility of disposal/recovery: 200 km x 0,105 euro = 21 euro for transport costs. That makes a financial guarantee of 161 euro per ton.

The notifier ships for example 20 ton in one shipment: 161 euro x 20 ton = 3220 euro. The minimal financial guarantee has to be 3220 euro. But then only one shipment of max. 20 tons is covered by the financial guarantee.

So if the notifier wants to do more shipments in a period and the certificate of recovery/disposal is not given yet, a higher financial guarantee is needed.

Say the notification is for 120 shipments (10 shipments per month) and the notifier and the consignee indicate that the certificate of disposal/recovery is provided within two months than the financial guarantee needs to cover 20 shipments. But we leave it at the responsibility of the notifier to provide a financial guarantee that is sufficient for the amount of waste not yet processed.

For Dutch notifiers we developed a tool on our website to calculate the financial guarantee. The link to our website is:

http://www.ilent.nl/onderwerpen/leefomgeving/afval/evoa_vergunningen/handreikingen_en_hulp middelen/handreikingen_en_tools/

The tool "borgtool" is used for the calculation of the financial guarantee:

 For Dutch, see http://www.ilent.nl/Images/borgtool_tcm334-334905.xls

 For English, see excel document below:

Tool to calculate
the financia...

The method mentioned above applies for every notification where the notifier applies for a lower rate than €450 per ton. If the competent authority is of the opinion that €450 is not sufficient he

could/should use the same method. Should the guarantee be higher than €450 per ton then we have chosen for a fixed treatment rate of €500 per ton. With fixed rates we add the costs for storage and shipment.

According to Art 6 (5) of the WSR, one notification corresponds to one shipment. Therefore, it may be concluded, that the guarantee should cover the notified shipment and the amount of waste for a single shipment. However, it is a different case when dealing with a general notification for multiple shipments and thousands of tons during a year. In such a case, the amount of waste shipped on a single shipment is multiplied with the number of shipments that will take place before the certificate of processing is given. In this case, the quantity of waste shown in the movement documents (not in the notification document) is of relevance. The financial guarantee should cover the amount of waste shipped, not necessarily that shown in the notification document.

First
The standard financial guarantee per tonne is € 450,-- (total costs of recovery or disposal, storage and transport). For the notifier it is possible to request a lower financial guarantee. The notifier needs to prove why a lower financial guarantee is reasonable. The Ministry can decide for a lower financial guarantee. In exceptional cases the Ministry can decide for a higher financial guarantee.

Second
The amount financial guarantee (FG) of a number of Basel-codes is lower or even higher than € 450 per tonne. The financial guarantee can be calculated as follows and it is not possible to request a lower financial guarantee:

$$FG = A + B + C$$

Where A, B, and C are shown in the following tables:

Fixed/flat rate for Recovery or disposal = A

Basel code	Fixed rate in €	Basel code	Fixed rate in €
A1030	400	A4070	500
A1050	400	A4080	500
A1060	400	A4090	400
A1100	125	A4120	400
A1160	0	A4130	500
A1170	125	Y46	125
A1190	0	AB130	125
A2030	400	AC070	500
A3020	0	AC080	400
A3040	500	AD090	400
A3050	500	B1010	0
A3140	0	B1040	125
A3150	500	B1070	0
A3170	500	B1100	500
A3180	500	B1115	0
A3190	500	B1250	125
A4010	500	B2020	125
A4030	500	B3010	0
A4050	500	B3030	125
A4060	500	B3140	125

Costs of storage per tonne for 90 days = B

Solid waste	€ 15/tonne
Liquide waste	€ 100/tonne

Costs of transport per tonne per unit of distance = C

Waste by land (per km)	€ 0,105/tonne/km
Waste per water (per nautical mile)	€ 0,02/tonne/mile

22. POLAND

The Chief Inspector of Environmental Protection accepts as financial guarantee, a bank deposit, a blocked account or an insurance guarantee. The amount of the financial guarantee (PLN) is calculated according to the formula laid down in the ordinance of the Minister of the Environment of 21 May 2008 on the calculation of the financial guarantee:

$$G = (D + T + M) \times A$$

where:

G - financial guarantee;
D - costs of disposal or recovery of notified waste per tonne, including costs of any necessary interim operation;
T - costs of transport of notified waste per tonne;
M - costs of storage per tonne for 90 days, where:
- solid non-hazardous waste € 47 (200 PLN),
- solid hazardous waste € 117 (500 PLN),
- liquid non-hazardous waste € 117 (500 PLN),
- liquid hazardous waste € 234 (1000) PLN;
A - total amount of waste covered by the financial guarantee.

Costs of disposal or recovery of waste per tonne, including any necessary interim operation (D) are determined on the basis of a contract concluded between the notifier and the consignee.

Costs of transport per tonne of waste (T) are determined on the basis of a contract concluded between the notifier and the carrier.

In accordance with the Act of 29 June 2007 on international shipment of waste the financial guarantee shall be paid as a deposit on a separate bank account indicated by the Chief Inspector of Environmental Protection.

The financial guarantee shall be valid for and cover a notified shipment and completion of recovery or disposal of the notified waste.

If the amount of the financial guarantee does not cover the costs referred to in Art. 6 para 1 to Regulation 1013/2006 the Chief Inspector of Environmental Protection shall issue the decision in which calls the notifier to subsidize the financial guarantee.

The financial guarantee shall be released on the request of the notifier when the shipment is completed and the Chief Inspector of Environmental Protection has received the confirmation documents required by the provisions of Regulation No 1013/2006.

23. PORTUGAL

The financial guarantee and equivalent insurance pursuant to Article 6 of Regulation (EC) No 1013/2006 and Portuguese decree law 45/2008 is calculated using the following formula:

$$GF = (T + E + A) \times Q \times 1.4 \times Ns$$

Where,

GF : financial guarantee or equivalent;
T : transport cost per tonne of waste;
E : cost of disposal / recovery, including any intermediate operations per tonne of waste;
A : cost of storage for 90 days per tonne waste;
Q : average amount, in tonnes per transfer;
Ns : maximum number of transfers that are expected would be made simultaneously from the country of dispatch to the country of destination.

If the waste has positive economic value, the treatment costs are set to zero and only the storage costs and transport costs are included in the calculation.

24. ROMANIA

[missing information]

25. SLOVAKIA

The financial guarantee and equivalent insurance pursuant to Article 6 of Regulation (EC) No 1013/2006 and Slovakian Act No. 223/2001 Coll. on waste (as amended) is calculated using the following formula:

$$FG = [(C_T + C_{R/D} + C_S) \times 1{,}5] \times N_T$$

Where,

FG = financial guarantee or equivalent
C_T = transport costs
$C_{R/D}$ = treatment costs for recovery or disposal
C_S = storage costs
N_T = number of transfers per one month
C_T = transport costs
C_T = T x D
T = transport cost per 1 km
D = transport distance (km)
$C_{R/D}$ = treatment costs for recovery or disposal

$C_{R/D}$ = E x Q
E = cost of disposal / recovery per tonne of waste

Q = average amount of waste, in tonnes per transfer
C_S = storage costs

C_S = A x Q
A = cost of storage for 90 days per tonne waste
Q = average amount of waste, in tonnes per transfer

26. SLOVENIA

The financial guarantee and equivalent insurance pursuant to Article 6 of Regulation (EC) No 1013/2006 is calculated using the following formulae:

$$C_{Tot} = m* (C_{R/D*} VAT_{SI} + C_T + C_{ST)})$$
$$C_T = l_* F$$

Where,

$C_{R/D}$ = costs of treatment:
C_T = transport costs
C_{ST} = storage costs
m = total notified mass of waste (tonnes)
$C_{R/D}$ = treatment costs for recovery or disposal (€/tonne)
VAT_{SI}= value added tax for services in Slovenia (9,5%)
l = transport distance (km)
F = correction factor for transport (0,1 €/km∗tonne)
C_{stor}= storage costs for 90 days per tonne (€/tonne)

27. SPAIN

[missing information]

28. SWEDEN

The financial guarantee or equivalent insurance is calculated on a case-by-case basis by the notifier, based on the amount of waste intended to be carried over a four week period and covering the costs for the transport, the recovery/disposal and storage of the waste for 90 days. There is no specific formula available.

Further information in Swedish is available through the following link:
http://www.naturvardsverket.se/Stod-i-miljoarbetet/Vagledningar/Avfall/Gransoverskridande-avfallstransporter/En-ekonomisk-sakerhet-ska-garantera-att-avfallet-omhandertas-korrekt/

29. UNITED KINGDOM

The formula used in the United Kingdom for calculating the financial guarantee is as follows:

Size of guarantee = [(A + B + C) × the number of active shipments] + D;

Where,

A = the cost of shipment;
B = the cost of disposal or recovery;
C = the cost of storage for 90 days; and
D = administrative costs (including legal fees and charges). This amount should be £595

29.1. England

In order to obtain approval of a financial guarantee or equivalent insurance in England, the application shown in the following link is used:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/298119/LIT_8478_dee2ea.pdf

In addition, the Environment Agency would consider an amount of cover calculated on the basis of a "worst case scenario". For example, the cost of disposal or recovery should take account of the possibility that the waste might not be described properly and could contain contaminants which the consignee (person receiving the waste) cannot deal with in an environmentally sound manner.

29.2. Scotland

If the general formula applicable for the UK is not used, the Scottish Environment Protection Agency (SEPA) will ask for evidence for the calculation, e.g. quotation for 90 days storage, transport costs and waste disposal. SEPA prefers to use disposal costs as the worst case scenario and requires that landfill tax is also factored in.

SEPA does not have an application form for the approval of the financial guarantee and requires the original financial guarantee to be sent to the agency.