

ZERO WASTE ALLIANCE IRELAND

Towards Sustainable Resource Management



Feedback to the European Commission on the Proposed Revised Regulation on Shipments of Waste, amending Regulations (EU) No. 1257/2013 and (EU) No. 2020/1056

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Zero Waste Alliance Ireland is a member of



and



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1. INTRODUCTION

On 17 November 2021, the European Commission issued a legislative proposal for the revision of the existing Regulations on shipments of waste¹, accompanied by an impact assessment report (SWD(2021)331), an opinion on the impact assessment (SEC(2021)402), a European Commission Staff Working Document (SWD(2021)330), and an Inception Impact Assessment.

The Inception Impact Assessment provided basic information to citizens and stakeholders about the Commission's planned revision, invited feedback on the intended initiative, requested European citizens and stakeholders to give their views on the Commission's understanding of the waste shipment problem, and invited submissions on possible solutions. Citizens and stakeholders are also asked to share any relevant information that they may have, including information on possible impacts of the different options set out in the documentation.

The first Waste Shipment Regulation on the supervision and control of shipments of waste within, into and out of the European Community was adopted in 1993,² and a second Regulation 1013/2006 on shipments of waste was adopted in

¹ Proposal for a Regulation of the European Parliament and of the Council on shipments of waste and amending Regulations (EU) No 1257/2013 and (EU) No 2020/1056 (Text with EEA relevance); COM(2021) 709 final; Brussels, 17.11.2021.

² Council Regulation (EEC) No 259/93 of 01 February 1993 on the supervision and control of shipments of waste within, into and out of the European Community.

2006.³ The 2006 Regulation had the effect of transposing into EU law the provisions of both the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and the 1992 OECD legally binding Decision on the control of transboundary movements of wastes destined for recovery operations.⁴

Subsequent to these Regulations, and before the adoption of the current Regulation No. 1257/2013, the “Waste Framework Directive” (WFD), 2008/98,⁵ was adopted, implementing the Waste Hierarchy in Article 4. That Directive set out the aim of making a transition to a recycling society; and stated that there should not be any support for landfilling or incineration of recyclable materials.

The Waste Hierarchy laid down a priority order of what constituted the best overall environmental option in waste legislation and policy; while stating that departing from the waste hierarchy may be occasionally necessary for specific waste streams, but only when justified for reasons of technical feasibility, economic viability and environmental protection.

The current waste shipment Regulation was the subject of an evaluation, which reported in January 2020, and which identified a number of significant problems with the current Regulation:⁶

- ✘ The WSR does not effectively support the transition to a circular economy within the EU, as some of its procedures are burdensome and are inconsistently implemented by the Member States, with the result that waste circulating within the EU fails to be properly and timely recycled;
- ✘ Important volumes of waste are exported outside the EU, often without sufficient control of the conditions under which these waste are managed in the destination countries, especially in developing countries. This can harm the environment and public health in destination countries. The provisions of the WSR do not appear sufficient to address this situation, and their implementation is uneven across the EU; and,

³ Regulation (EC) No. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste; OJ 190, 12-July-2006. The Regulation was amended in 2014 by Regulation (EU) No 660/2014) which led to the inclusion of new provisions on the enforcement of the rules on shipments of waste.

⁴ OECD, *Decision of the Council on the Control of Transboundary Movements of Wastes Destined for Recovery Operations*, OECD/LEGAL/0266. Original Decision dated 1992, and revised on 07 September 2020, with modifications to Appendixes 3 and 4 of the Decision; these modifications became effective on 01 January 2021.

⁵ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ 312, 22.11.2008, p. 3).

⁶ Commission Staff Working Document – Evaluation of Regulation (EC) No 1013 /2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste. SWD(2020) 26 final, Brussels, 31.1.2020.

- ✘ The enforcement of the WSR is also insufficient, which results in high amount of illegal shipments of waste occurring within the EU, as well as from the EU to third countries.⁷

We would agree with the identification of these problems, and in our submission we will expand on the issues identified in the Commission's evaluation.

Between 11 March and 08 April 2020, the Commission provided an opportunity for submissions (feedback) to be made on the roadmap for review of the proposed amended waste shipment Regulation, and a public consultation period from 07 May to 30 July 2020 was available for further submissions to be made on the proposed Regulation. Unfortunately, Zero Waste Alliance Ireland (ZWAI) was unable to provide observations to the Commission at either of these earlier stages; and we have therefore undertaken the necessary research to provide the Commission with reasonably detailed and evidence-based comments on the proposed new regulation at this stage.

We trust that the observations in this submission will be considered as a relevant and a positive contribution to the improvement of the waste shipment regulations.

2. ZERO WASTE ALLIANCE IRELAND (ZWAI)

At this point we consider that it is appropriate to mention the background to our submission, especially the policy and strategy of ZWAI.

2.1 Origin and Activities of ZWAI

Zero Waste Alliance Ireland (ZWAI), established in May 1999, and registered as a company limited by guarantee in 2004, is a Non-Government Environmental Organisation (eNGO) and a registered charity. During two decades ZWAI has submitted to the Government and to State Agencies many policy documents on waste management, on using resources sustainably, on promoting re-use, repair and recycling, and on development and implementation of the Circular Economy.

One of our basic guiding principles is that human societies must behave like natural ecosystems, living within the sustainable flow of energy from the sun and plants, producing no materials or objects which cannot be recycled back into the earth's systems, or reused or recycled into our technical systems, and should be guided by economic systems and practices which are in harmony with personal and ecological values.

⁷ Quoted in section 1.3, page 16, of the Commission Staff Working Document: Impact Assessment. Accompanying Proposal for a regulation of the European Parliament and of the Council on shipments of waste and amending Regulations (EU) No 1257/2013 and (EU) No 2020/1056. Commission SWD(2021) 331 final; Brussels, 17.11.2021.

Our principal objectives are:

- i) sharing information, ideas and contacts,
- ii) finding and recommending environmentally sustainable and practical solutions for domestic, municipal, industrial and agricultural waste management;
- iii) lobbying Government and local authorities to implement environmentally sustainable waste management practices, including clean production, elimination of toxic substances from products, re-use, recycling, segregation of discarded materials at source, and other beneficial practices;
- iv) lobbying Government to follow the best international practice and EU recommendations by introducing fiscal and economic measures designed to penalise the manufacturers of products which cannot be re-used, recycled or composted at the end of their useful lives, and to financially support companies making products which can be re-used, recycled or are made from recycled materials;
- v) raising public awareness about the long-term damaging human and animal health and economic consequences of landfilling and of the destruction of potentially recyclable or re-usable materials by incineration; and,
- vi) maintaining contact and exchanging information with similar national networks in other countries, and with international zero waste organisations.

2.2 Our Basic Principles

In nature, the waste products of every living organism serve as raw materials to be transformed by other living creatures, or benefit the planet in other ways. Instead of organising systems that efficiently dispose of or recycle our waste, we need to design systems of production that have little or no waste to begin with.

There are no technical barriers to achieving a “zero waste society”, only our habits, our greed as a society, and the current economic structures and policies which have led to the present environmental, social and economic difficulties.

“Zero Waste” is a realistic whole-system approach to addressing the problem of society’s unsustainable resource flows – it encompasses waste elimination at source through product design and producer responsibility, together with waste reduction strategies further down the supply chain, such as cleaner production, product repairing, dismantling, recycling, re-use and composting.

ZWAI strongly believes that Ireland and other Member States, and the EU as a whole, should have a policy of not sending to other countries our discarded materials for further treatment or recycling, particularly to developing countries where local populations are being exposed to dioxins and other very toxic POPs. Relying on other countries' infrastructure to achieve our "recycling" targets is not acceptable from a global ecological and societal perspective.

2.3 What We are Doing

Our principal objective is to ensure that government agencies, local authorities and other organisations will develop and implement environmentally sustainable resources and waste management policies, especially resource efficiency, waste reduction and elimination, the promotion of re-use, repair and recycling, and the development and implementation of the Circular Economy.

As an environmental NGO, and a not-for-profit company with charitable status since 2005, ZWAI also campaigns for the implementation of the UN Sustainable Development Goals, including (but not limited to) Goal 12, Responsible Consumption and Production, and Goal 6, Clean Water and Sanitation (having particular regard to the need to avoid wasting water).

In addition to responding to many public consultations, members of ZWAI have given presentations on how the European Union has addressed the problem of plastic waste (March 2019), on single-use plastic packaging by the food industry (November 2019), and other relevant topics.

It will be clear that ZWAI is primarily concerned with the very serious issue of discarded substances, materials and goods, whether from domestic, commercial or industrial sources, how these become "waste", and how such "waste" may be prevented by re-design along ecological principles. These same ecological principles can be applied to the many ways in which we abstract and use water as a resource, and to the equivalent volumes of wastewater produced as a consequence of these uses.

ZWAI is represented on the Irish Government's Waste Forum and Water Forum (An Fóram Uisce), is a member of the Irish Environmental Network and the Environmental Pillar, and is funded by the Department of Communications, Climate Action and the Environment through the **Irish Environmental Network**.

In 2019 ZWAI became a full member of the **European Environment Bureau** (EEB); and we participate in the **Waste Working Group** of the EEB. Through the EEB, we contribute to the development of European Union policy on waste and the Circular Economy.

3. OBSERVATIONS ON THE PROPOSED REVISED REGULATION ON SHIPMENTS OF WASTE

3.1 Use of the Term “Recovery”

The term “recovery” appears on some 58 pages of the proposed Regulation and the Explanatory Memorandum (COM(2021) 709 final), and is defined in Article 3 as:

“any of the recovery operations under R 12 and R 13 referred to in Annex II to Directive 2008/98/EC”

Annex II of Directive 2008/98/EC lists 13 operations classified as “recovery”, the most relevant for our purpose is R1:

“Use [of waste] principally as a fuel or other means to generate energy”

The operation classified as R1 includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above 0.65 for installations permitted after 31 December 2008, and there is no reference to the use of waste as a supplementary fuel in plants producing cement. The definition is out-of-date, and should be replaced by a definition which takes into account the current EU policy on the Circular Economy.

In this connection, we would point out that all of the cement production plants in Ireland have been granted planning permission and Industrial Emissions Licences for the burning of a wide variety of discarded materials (waste) as co-fuels in cement kilns. Similar to SSF (Secondary Solid Fuel) in other EU Member States, the Irish cement production plants burn Solid Recovered Fuel (SRF) and Refuse Derived Fuel (RDF). SRF comprises fragments of plastics, paper, cardboard, textiles, chipped tyres and sterilised meat and bonemeal (MBM). RDF comprises the same materials but is a lower specification product than SRF with a lower calorific value.

It is our submission that this practice is inconsistent with the Circular Economy policy of the EU and is in conflict with Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment (the “Taxonomy Regulation”).

The reasons why this practice is allowed, and the financial benefits to the participating cement plants under the EU Emissions Trading Scheme, should be examined by the Commission, and the practice should be severely curtailed and/or made much less financially rewarding under the amended Directive on Waste Shipment. This is an important issue, as we are aware that wastes are being exported from Ireland, to be used as a co-fuel in cement production plants in other member States.

A further problem we have with the term “recovery” is that it is a euphemism of “energy recovery”, and by omitting the word “energy”, gives the misleading impression that the material is somehow “recovered” instead of being burned to yield only a small fraction of the embodied energy which went into the production of the discarded materials (primarily, paper, card, plastic, vehicle tyres and timber). Burning these materials is, we advocate, contrary to the requirement to reduce carbon dioxide emissions, to mitigate climate change.

It is therefore our submission that wherever the word “recovery” appears in the revised Regulation, and where “recovery” means the burning of the discarded materials as a fuel, the word “energy” should precede the word ‘recovery’ so that the full meaning of the term is clarified. It would be even better, if it were possible, to use the term “partial energy recovery”, as being more precise.

3.2 Environmental and Adverse Health Effects of Burning “Waste” in Cement Production Plants

One of the problems associated with the burning of waste as a co-fuel in cement production plants in Europe (including a number of such plants in Ireland, with which ZWAI is familiar) exposure to cement plant emissions has been found to be associated with a higher risk of respiratory symptoms and a decline in lung function. Both children and adults were found to have “*an excess risk of cancer incidence and mortality*”. Additionally, exposure was associated with higher concentrations of heavy metals in blood or urine and renal damage.⁸

The burning of wastes in cement kilns also results in human exposure to heavy metals, PCDDs/PCDFs, polycyclic aromatic hydrocarbons, and other persistent atmospheric pollutants.⁹

It is our concern that if the burning of waste in cement plants is not restricted, the prohibition on the shipment of waste to other Member States or to third countries could lead to an increase in the use of waste by cement plants, resulting in direct negative impacts on human health and the environment.

⁸ Raffetti, E., Treccani, M. and Donato, F., 2019. Cement plant emissions and health effects in the general population: a systematic review. *Chemosphere*, 218, pp.211-222.

⁹ Conesa, J.A., Gálvez, A., Mateos, F., Martín-Gullón, I. and Font, R., 2008. Organic and inorganic pollutants from cement kiln stack feeding alternative fuels. *Journal of Hazardous Materials*, 158(2-3), pp.585-592.

3.3. Further Problems of Incineration and Waste-to-Energy (WtE)

“Recovery” of plastic and other combustibles waste is mainly achieved through thermal processing, i.e., burning plastic as part of solid recovered fuel in cement production and steel production.¹⁰ As we have pointed out in section 3.1 above, the term “recovery” is misleading and is not adequately defined in the proposed Regulation.

WtE processes burn waste-derived-fuel (WDF), which includes SSF (Secondary Solid Fuel), Solid Recovered Fuel (SRF) and Refuse Derived Fuel (RDF), to recover some of the embodied energy from wastes. Plastic, rubber, food, wood, and other miscellaneous materials contain chemical energy released by burning to produce electricity, or energy for industrial processes. The burning of WDF seems, at a glance, to efficiently recover energy that would otherwise be lost to landfill. Additionally, energy expenditure on waste transportation to landfill is avoided, and the process is becoming commercially more attractive, as the rising costs of fossil fuels is leading to a global energy crisis.

However, closer inspection of the system reveals it is highly inefficient and polluting. The energy contained in WDF is mostly derived from fossil fuels in the first place. Dangerous emissions have been recorded in the atmosphere from burning WDF in WtE plants. A literature review by Cole-Hunter *et al.*¹¹ found that WtE facilities may emit concentrated toxins with serious health risks, including dioxins, furans and heavy metals. Human exposure to heavy metals, including lead/chromium and manganese/cadmium from vegetables and cereals grown in the vicinity of municipal solid waste incinerators, has been widely reported.

Furthermore, these toxins may remain problematic in bottom ash, which is often sent to landfill. WtE incinerators are an unsustainable answer to the energy crisis. Choosing incineration over landfill is the lesser of two evils, as both of these processes are at the bottom of the Waste Hierarchy.

A life-cycle approach to discarded products and packaging, combined with an effective recycling system is the more sustainable approach for a circular economy, which is the aim of the Circular Economy Action Plan. Unfortunately we could find no mention of this approach in the proposed revision of the Waste Shipment Regulation.

¹⁰ Schneider, D.R. and Ragossnig, A., 2015. Recycling and incineration, contradiction or coexistence?. *Waste Management and Research*, 33(8), pp.693-695.

¹¹ Cole-Hunter, T., Johnston, F.H., Marks, G.B., Morawska, L., Morgan, G.G., Overs, M., Porta-Cubas, A. and Cowie, C.T., 2020. The health impacts of waste-to-energy emissions: a systematic review of the literature. *Environmental Research Letters*, 15(12), p.123006.

There is no doubt that CO₂ emissions from WDF/SRF/RDF burning make a not insignificant contribution to climate change. Beylot and Villeneuve,¹² who studied and compared the environmental performances of 110 French incinerators (i.e. 85% of the total number of plants currently in operation in France) from a Life Cycle Assessment perspective, concluded that the effects of incinerating one tonne of municipal solid waste on climate change may be summarised as a benefit or reduction of 58 kg CO₂eq, compared with an emission of 408 kg CO₂eq, giving an average adverse impact of 294kg CO₂eq per tonne of waste burned. This burden cannot be ignored, and therefore a lifecycle approach (see also section 3.7 below) to dealing with waste must be implemented to prevent or avoid GHG emissions from incineration or any other form of waste to energy.

Municipal solid waste incineration (MSWI) also generates bottom fly ash, fly ash and air pollution control residues, which are hazardous to human and ecological health due to the presence of heavy metals and soluble salts. These by-products must be treated before disposal to minimise pollution to the environment.

One solution is to reduce, reuse and recycle waste before it ends up as WDF, paper and metal can then help meet the demand for raw material.¹³ The energy saved and pollution avoided by re-using and recycling materials will outweigh the benefits of WtE. This conclusion should be embodied in the revised Waste Shipment Regulation.

3.4 Waste and Climate Change

The climate crisis and the urgent requirement imposed on the EU and all Member States to act (adaptation and mitigation) will have a wide and disruptive effect during the next decade. In Ireland, the Climate Action and Low Carbon Development (Amendment) Act 2021 requires the Government to:

“ ...pursue the transition to a climate resilient, biodiversity rich and climate neutral economy by no later than the end of the year 2050 and to thereby promote climate justice; to make certain changes to the Climate Change Advisory Council; to provide for carbon budgets and a sectoral emissions ceiling to apply to different sectors of the economy; to provide for reporting by Ministers of the Government to a joint committee of the Houses of the Oireachtas; to provide for local authority climate action plans; for those and other purposes to amend the Climate Action and Low Carbon Development Act 2015; to provide that local authorities shall, when making

¹² Beylot, Antoine & Villeneuve, Jacques. (2013). Environmental impacts of residual Municipal Solid Waste incineration: A comparison of 110 French incinerators using a life cycle approach. Waste management (New York, N.Y.); 33 (12), August 2013.

¹³ Pajula, T., Behm, K., Vatanen, S. and Saarivuori, E., 2017. Managing the life cycle to reduce environmental impacts. In Dynamics of Long-Life Assets (pp. 93-113). Springer, Cham.

development plans, take account of their climate action plans and, for that purpose to amend the Planning and Development Act 2000”.

To avoid the “business as usual” scenario, legislative and practical changes will be needed in all areas mentioned in the paragraph above. Similar changes in climate-related legislation and action programmes in other EU Member States will also have an effect on the way in which materials are extracted, used and discarded, with minimal impact on greenhouse gas production throughout the entire life cycle of the materials and products.

It is therefore disappointing to find only two brief mentions of climate, and no reference to the urgent need to address the accelerating climate emergency, in the proposed Regulation and Memorandum:

1. A brief reference to Article 191 of the Treaty on the Functioning of the European Union which must contribute to objectives including the promotion of measures at international level to deal with regional or worldwide environmental problems, and in particular to combat climate change (Explanatory Memorandum, Section 2, page 3); and,
2. A reference to the European Green Deal,¹⁴ which is described as setting out “*an ambitious roadmap to transform the Union into a sustainable, resource efficient and climate neutral economy*” (Preamble, to the proposed Regulation, paragraph (3)).

It is therefore our observation that the proposed Regulation should pay more attention to, and should include more detailed and stronger links to the EU climate policy, with the intention of ensuring that the use of discarded materials (including “energy recovery”) does not conflict with climate mitigation policy and action. In particular, any shipment of waste must be controlled and regulated specifically to severely limit or eliminate greenhouse gas emissions, either as a consequence of waste processing or transportation. Such an approach, we suggest, would also be consistent with the proximity principle, of dealing with discarded materials as near as possible to the location where they originate.

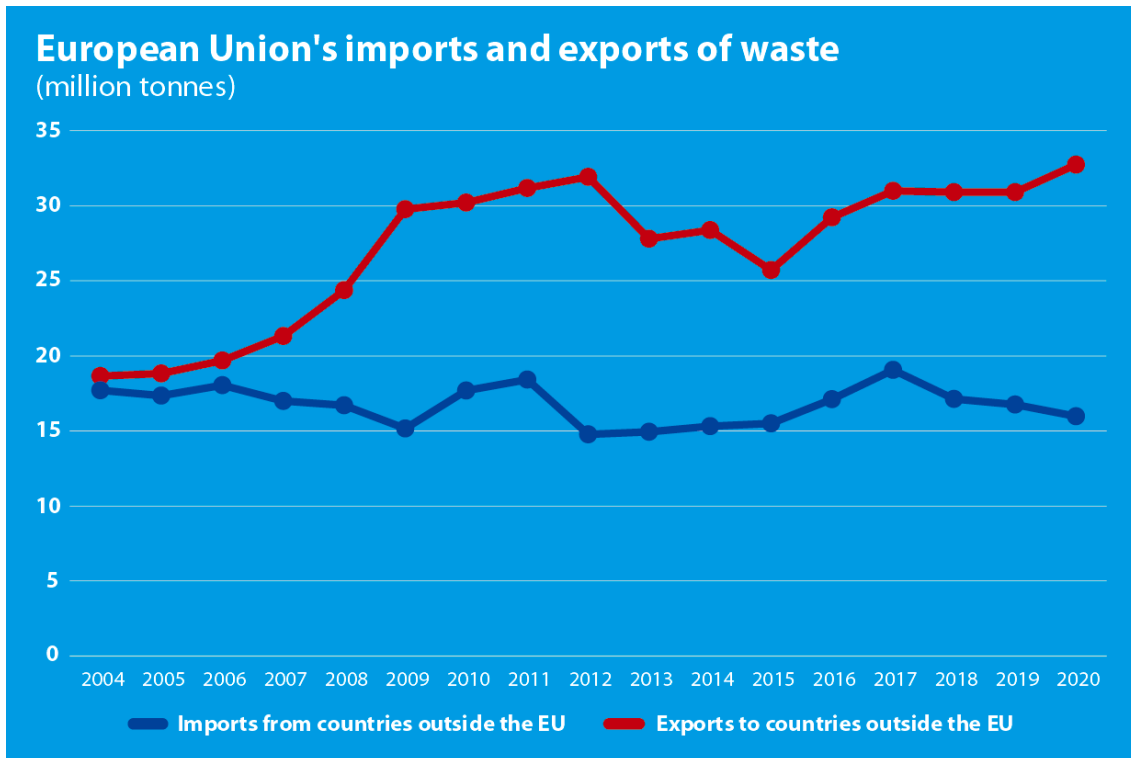
Transport of waste between Member States, and export of waste to non-EU countries, also conflicts with the **Proximity Principle**, which requires that wastes should be processed as close to their point of origin as possible, and the transport of wastes contributes to greenhouse gas (GHG) emissions.

¹⁴ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal (COM (2019) 640 final).

3.5 Export of Waste and the Need for Prohibition of Exports

As stated in the Explanatory Memorandum to the proposed amended Regulation, approximately 32.7 million tonnes of waste were exported from the EU to non-EU countries in 2020, an increase of 75% since 2004 (see Fig 1 below).¹⁵

The majority of waste exported from the EU include ferrous and non-ferrous metal scrap, paper waste, plastic waste, textile waste and glass; and the principal destinations to which waste is exported include India, which received almost 2.9 million tonnes of waste from the EU in 2020, followed by Britain (1.8 million tonnes), Switzerland (1.6 million tonnes), Norway (1.5 million tonnes), Indonesia and Pakistan (both 1.4 million tonnes). In recent years, Pakistan has become an important destination for EU waste, with volumes increasing from 0.1 million tonnes in 2004 to 1.4 million tonnes in 2020.



ec.europa.eu/eurostat

Fig 1: European Union imports and exports of waste, 2004 to 2020

In contrast, EU exports of waste to China have fallen from a peak of 10.1 million tonnes in 2009 to 0.6 million tonnes in 2020. Exports of ferrous metals waste

¹⁵ Proposal for a Regulation of the European Parliament and of the Council on shipments of waste and amending Regulations (EU) No 1257/2013 and (EU) No 2020/1056 (Text with EEA relevance); Section 1, page 1. COM(2021) 709 final; Brussels, 17.11.2021. For more information see, [https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20210420-1#:~:text=In%202020%2C%20EU%20exports%20of,16.0%20million%20tonnes%20in%2020.0.](https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20210420-1#:~:text=In%202020%2C%20EU%20exports%20of,16.0%20million%20tonnes%20in%2020.)

(iron and steel) from the EU amounted to 17.4 million tonnes in 2020, more than half (53%) of all waste exports from the EU.¹⁶

ZWAI therefore welcomes the prohibition, in Article 11, of shipments of waste destined for disposal, but we would also like to see Article 12 strengthened to include more stronger reasons for objecting to shipments of waste destined for so-called “recovery”, especially given that the term “recovery” includes, as we have pointed out in section 3.1 above, the burning of waste as a fuel for the production of heat.

Article 34, on the prohibition of exports of waste destined for disposal, and Articles 36 to 40, on the prohibition of exports of waste for recovery, are welcome; but we consider that there are too many “escape clauses”, allowing such exports, and the Articles are too complex.

ZWAI strongly advocates that the EU must stop exporting waste, particularly to developing countries, and we welcome increased recycling internally and the transition to a circular economy. The export of discarded plastics (plastic waste) can easily contribute to an “*out of sight out of mind*” mentality especially in high income countries which produce large quantities of packaging waste. In such countries, exporting plastic waste creates a psychological distance from plastic waste pollution.¹⁷

3.6 Production and Export of Electronic and Electrical Waste (eWaste)

In Europe, the WEEE Directive¹⁸ provides some control over the generation and fate of waste electrical and electronic equipment (WEEE), about 8 million tonnes of which are generated annually.¹⁹

According to the Irish EPA, Ireland surpassed EU targets for recycling and recovery of this form of waste, producing 62,600 tonnes.²⁰ Most or all of this waste is exported, with developing countries being the principal destinations.

One of the most significant and important reasons for restricting the export of e-wastes is that the informal processing of e-waste in developing countries is a major contributor to environmental pollution. For example, a study by Pradhan

¹⁶ <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-%2020210420-%201>.

¹⁷ Barnes, S.J., 2019. Out of sight, out of mind: Plastic waste exports, psychological distance and consumer plastic purchasing. *Global Environmental Change*, **58**, p.101943.

¹⁸ Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (OJ L 197, 24.7.2012, p. 38–71).

¹⁹ Ackah, M., 2017. Informal E-waste recycling in developing countries: review of metal (loid) s pollution, environmental impacts and transport pathways. *Environmental Science and Pollution Research*, **24**(31), pp.24092-24101.

²⁰ EPA, Waste electrical and electronic equipment (WEEE), <https://www.epa.ie/our-services/compliance--enforcement/waste/weee/>, accessed 13/01/2022.

and Kumar²¹ analysed heavy metals in surface soils, plants and groundwater samples collected from and around informal recycling workshops in Mandoli industrial area, Delhi, India.

Heavy metals such as arsenic (17.08 mg/kg), cadmium (1.29 mg/kg), copper (115.50 mg/kg), lead (2,645.31 mg/kg), selenium (12.67 mg/kg) and zinc (776.84 mg/kg) were higher in surface soils of e-waste recycling areas compared to control areas. These levels exceeded EPA suggested safe levels. High accumulations were also observed in the native plant, Bermuda Grass (*Cynodon dactylon*). Groundwater samples collected from the recycling area had high heavy metal concentrations, compared to the permissible limit of Indian Standards and maximum allowable limit of WHO guidelines for drinking water.

3.7 A Life-Cycle Approach to Waste Reduction and Recycling

Even though preventing or eliminating the production of waste in the first place is not strictly part of a Regulation on the shipment of waste, it must be stated that reducing the quantity of waste generated is a vital step towards reducing the amounts of waste shipped or moved within the EU, between Member States, and shipped or exported from the EU to third countries.

Prevention of waste, and the recycling of discarded materials, are fundamental to sustainable waste disposal practices.²²

The supply of waste from industry and commercial activity must be reduced, in order to decrease the amount processing needed at the end of its lifespan. Additionally, regulations must be imposed on products and packaging to ensure they are designed for recycling, and do not degrade or spoil the quality of material entering the recycling system.²³

Simply raising the rate of recycling will likely lead to a decrease in the quality of recycled plastic products, which have low market demand. Regulating the packaging market and strongly promoting design-for-recycling strategies will help to ensure the future quality of recycled plastic.²⁴ If the quality of discarded and segregated plastic is good, and it becomes easily and relatively cheaply available, the need to transport the material to distant reprocessing plants (either in another Member State or in a third country) could be greatly reduced. A further

²¹ Pradhan, J.K. and Kumar, S., 2014. Informal e-waste recycling: environmental risk assessment of heavy metal contamination in Mandoli industrial area, Delhi, India. *Environmental Science and Pollution Research*, **21**(13), pp.7913-7928.

²² Cucchiella, F., D'Adamo, I. and Rosa, P., 2016. Urban waste to energy (WTE) plants: A social analysis. *JP Journal of Heat and Mass Transfer*, **13**(3), pp.421-444.

²³ Schneider, D.R. and Ragossnig, A., 2015. Recycling and incineration, contradiction or coexistence?. *Waste Management and Research*, **33**(8), pp.693-695.

²⁴ Picuno, C., Van Eygen, E., Brouwer, M.T., Kuchta, K. and Thoden van Velzen, E.U., 2021. Factors Shaping the Recycling Systems for Plastic Packaging Waste — A Comparison between Austria, Germany and The Netherlands. *Sustainability*, **13**(12), p.6772.

result would be that the need for transboundary shipment of waste, and the resulting controls and costs, could also be reduced, benefitting the industry and consumers.

In order to achieve these desirable outcomes, ZWAI advocates:

1. An end to the concept of 'planned obsolescence'; with more pressure and regulations imposed on the industries responsible for manufacturing all types of consumer products and goods, especially electronic goods which are challenging to recycle;
2. Consumers should have the right to know whether the devices which they are about to purchase, or have purchased, are built to be repaired, or they are repairable; or whether they are planned for obsolescence;
3. Consumers should be given the facility to repair, or to have repaired for them, the products or goods which they have purchased; and this should be imposed through EU legislation; electronic and electrical products should be designed for easy, low-cost disassembly and repair; and repairing should cost less than purchasing a brand-new product;
4. Design should be aimed to achieve both longevity and performance;
5. A scoring system (similar to that operating in France) should be introduced EU-wide to indicate the repairability of electrical and electronic goods, such as that proposed by the 'Right to Repair' movement;
6. It is our submission that the above proposals, if implemented, would reduce the need for, and the quantity of, wastes being transported and/or transhipped within the EU and between Member States and third countries; and,
7. The proposed amended Waste Shipment Regulation should include a strong reference (possibly in the Preamble) to this integrated approach to waste reduction and elimination, and to the resulting benefit of a reduction in the quantities of materials classified as waste being transported within the EU and exported from the EU.

3.8 Increased Recycling Capacity Needed

ZWAI has continually expressed concern that the recycling industry in the EU does not have the capacity to process the additional quantities of waste which would need to be recycled if the export of waste to third countries becomes more difficult or costly. The desirable goal of limiting or prohibiting export of waste must take this challenging fact into account.

Without appropriate investment and financial support, the recycling sector could be unable to react quickly enough to take advantage of the increased availability

of waste. Given that only 9% of plastic is recycled globally, with the remaining 91% being consigned to landfills or incineration plants, or is mismanaged and finds its way as a world-scale contaminant into rivers, lakes and oceans,²⁵ it would not be surprising if the additional quantities waste prevented from being exported would likely become used as a fuel in incinerators, cement plants or other waste-to-energy (WtE) facilities.

It is therefore essential that this highly probable consequence must be avoided, in order to minimise damage to human health, contamination of the environment and CO₂ emissions. A strong EU policy is needed to ensure Member States have sufficient recycling capacity; and Member States must be encouraged or persuaded by legislation to significantly expand their current recycling facilities.

ZWAI would like specific examples from the Commission of how the recycling industry will be encouraged and supported; and it is our submission that such support and encouragement should be included as a priority aim in the proposed amended Waste Shipment Regulation. While not strictly part of the legislation on transboundary movement of wastes (either within the EU or to third countries) it is easy to visualise the relationship between export prohibition and a shortage of recycling capacity. It is our submission that an integrated approach to these lined issues is essential to secure a positive and beneficial outcome.

3.9 Contamination, Segregation and Sorting of Waste

From the beginning of our existence as an environmental NGO, **Zero Waste Alliance Ireland** has stated that human societies produce very little waste, but we primarily produce huge amounts of discarded materials which do not become waste until they are mixed and contaminated.

The mixing of different waste types renders them less useful for recycling, and some recycling facilities refuse to process such waste.²⁶ For example, food waste mixed with other domestic or commercial wastes, to produce mixed Municipal Solid Waste (MSW) makes recycling of the constituents much more difficult, and in many cases impossible. Such waste is more likely to end up in incinerators, cement plants or other WtE plants.

Segregation of discarded materials at their point of origin is a key part of the operation of the Circular Economy. Therefore segregation of recyclable materials must be improved, together with measures to prevent mixing and contamination during collection and transport.

²⁵ Geyer, R., Jambeck, J.R. and Law, K.L., 2017. Production, use, and fate of all plastics ever made. *Science advances*, **3**(7), p. 1700782.

²⁶ Picuno, C., Van Eygen, E., Brouwer, M.T., Kuchta, K. and Thoden van Velzen, E.U., 2021. Factors Shaping the Recycling Systems for Plastic Packaging Waste — A Comparison between Austria, Germany and The Netherlands. *Sustainability*, **13**(12), p.6772.

A study by Picuno *et al.* (2021) reported that most of the materials lost from the recycling stream occur at the sorting stage as result of the complex mixture of wastes arriving at a Materials Recovery Facility, where a combination of many different types of materials have to be sorted. In addition, the use of multiple materials in a single item of used and discarded packaging (for example paper, aluminium, various plastic polymers and pigments) seriously complicates the tasks of sorting and recycling.²⁷

Segregation at source, prevention of contamination, and efficient sorting of mixed wastes, should therefore go together with the proposed improvement in the control and regulation of waste shipments. A significant improvement in segregation, and the resulting production of quality assured materials for recycling, would go a significant way towards decreasing the quantities of mixed wastes (especially MSW) being transported from EU Member States to third countries.

It is therefore our submission that the proposed amended Regulation should include a reference to the benefits of segregation at source, and should be linked to a requirement that Member States must introduce legislation to prevent the mixing of various waste categories. This can be done, for example, by introducing an initial requirement on households to have a minimum of at least 3 waste bins for different types of waste, with this number being increased to 4 or 5 within 3 or 4 years.

In Ireland, segregation of waste at source is poorly managed, with most households being provided with only two waste “bins”, and the contents of the bins from many households being mixed and compacted before delivery to a sorting facility. Shops are not required to take back any of the large quantities of packaging which they place on the market by their excessive packaging of many consumer products, including foodstuffs; and the problem and cost of getting rid of this packaging is left to the householder. “Fly-tipping” in rural and some urban areas is common, and the clean-up costs are borne by the local authorities (County and City Councils).

It is our understanding that one of the causes of the problem lies in the decision by the Irish Government to give the entire responsibility for waste collection and management to private commercial firms.

In most EU Member States the collection of discarded materials or waste is the responsibility of local governments, municipalities or a publicly owned company; while in Ireland the collection and further use or disposal of discarded materials or waste has been handed over to privately owned firms. The Irish Government has handed control of all our discarded materials to the “waste industry”, with the

²⁷ Roosen, M., Mys, N., Kusenberg, M., Billen, P., Dumoulin, A., Dewulf, J., Van Geem, K.M., Ragaert, K. and De Meester, S., 2020. Detailed analysis of the composition of selected plastic packaging waste products and its implications for mechanical and thermochemical recycling. *Environmental Science & Technology*, **54**(20), pp.13282-13293.

result that the State has lost control over waste, as pointed out in a recent report by the Competition and Consumer Protection Commission (CCPC).²⁸



A split bale of highly odorous mixed municipal waste destined for export; but, because the bale had been damaged, it was being returned to the exporter's premises in Churchfield, Cork City. Photo: Ellie O'Byrne, Tripe + Drisheen.

This light-regulation approach has resulted in the management of our waste becoming a profit-driven industry, with multiple companies “competing” against each other, though there is no real competition, as pointed out by the CCPC. We question whether the intentions of these individual companies are to efficiently and sustainably manage waste or to yield the highest profit margin possible – and in our experience, the latter is most likely.

On several occasions in recent years, Irish companies have been discovered to be exporting mixed municipal waste to other EU Member States, with the high

²⁸ The Operation of the Household Waste Collection Market, a report by the Competition and Consumer Protection Commission, September 2018.

probability that such wastes were ultimately destined for third countries. According to a recently published news item, 206,000 tonnes of waste were exported from the Port of Cork in 2020, and only 5.5% of this was plastics for recycling (see photo on previous page).²⁹

It is our submission that the proposed change in EU legislation should oppose the privatisation of the waste sector in Member States, as the management of waste as a source of secondary raw materials and resources should be seen as a matter of global importance controlled by the Member State in question, and not by private 'for-profit' companies.

3.10 Traceability, Transparency and Access to Information

It is good to see in paragraph 28 of the Preamble that Member States should be required to ensure that, in accordance with the United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters of 25 June 1998 (Aarhus Convention), the relevant competent authorities make publicly available by appropriate means information on notifications of shipments they have consented to, as well as on shipments of waste subject to the general information requirements of the proposed amended Regulation.

It is also good to see that Article 21, entitled "*Public access to notifications*", requires the competent authorities of dispatch or destination to make publicly available by appropriate means information on notifications of shipments they have consented or objected to, as well as on shipments of waste subject to the general information requirements, where such information is not confidential under national or Union legislation.

These requirements are important to us in Ireland, because one of the challenges which we are currently facing is that the Environmental Protection Agency has decided that it no longer requires licensed companies to provide detailed information in the licensee's Annual Environmental Report on the types and amounts of wastes generated by each licensee. This change in data collection has essentially eliminated the requirement by companies to log their tonnage according to EU waste code, destination etc., and has replaced it with a system where the annual tonnage of waste generated is listed only under the categories of "recovery" or "disposal." The Agency made this change after consulting only the licensed industrial operations which it regulates; no member of the public, NGO or local authority was informed of this "public" consultation.

However, it now appears that the Irish Central Statistics Office has taken over the official task of collecting data on waste prediction and waste exports. The CSO

²⁹ Where do the contents of Cork's wheelie bins end up? Tripe + Drisheen, Ellie O'Byrne, 30 December 2021. <https://tripeanddrisheen.substack.com/p/where-do-the-contents-of-corks-wheelie>

has issued a questionnaire that must be filled out by companies declaring their waste generation, and the CSO website gives access to a guidance booklet and to a copy of a recently published Statutory Instrument (SI No 661 of 2021) giving to the CSO this task of reporting waste.

The CSO website states that *"the survey collects detailed information on the type and amount of waste generated by enterprises in order to meet EU and national needs for these statistics. This survey is conducted on a statutory basis under the Statistics (Waste Generation and Treatment Survey) Order 2021 (SI No 661 of 2021) made under the Statistics Act 1993 and EU law."*

We do not yet know whether this new system will provide the necessary degree of transparency and information which was previously available, or whether the CSO will provide only general information about the quantities of wastes produced, transported and exported, and the destinations to which they are sent.

3.11 Some Case Studies

3.11.1 The Netherlands

Recycling rates of plastic packaging waste in the Netherlands in 2017 were estimated at 30%. Packaging materials are one of the largest contributors to MSW production. The EU directive 852/2018 sets the requirement for member states to accomplish a recycling rate for plastic packages of 50% in 2025 and of 55% in 2030. Applying strategies implemented in the Netherlands to other EU member states could help in achieving these goals.

Some elements of the Dutch waste management strategy are:

1. Extended Producer Responsibility (EPR)

All packaging producers are obliged to declare the quantity of material they supply to the market and must pay a fee to the respective EPR schemes. This means producers are responsible for the end-of-life phase of the products, and not just the collection of the products.

2. Deposit Refund System (DRS) for PET Bottles

The Dutch operator SRN estimates the capture rate of PET bottles at about 95%. Compare this with the capture rate of 65% in Austria, which does not have a DRS.

3. Dedicated recycling facilities

A total of six recovery facilities for the mechanical recovery of plastic from MSW have been established as of 2021, in addition to the recycling facilities that process sorted recyclable waste. In other European countries, recycled plastic recovered from MSW is not counted towards

recycling rates, possibly due to differences in the quality of the plastic recycled from MSW.

4. Mixed Plastics

Large amounts of plastic packages in the Netherlands are sorted into “mixed plastics”, though the market for this type of recycled plastic is low. The supply of mixed plastics is likely to increase in the EU because of policies introduced to encourage more recycling. However, the demand for mixed plastics will likely stay the same. A solution may be the introduction of pyrolysis facilities that can process mixed plastics into pyrolysis oil that can be fed into cracking feedstocks.

3.11.2 Lithuania

An extensive study by Malinauskaitė *et al.*³⁰ assessed the performance of Lithuania in terms of MSW generation and recycling rates. In 2014, only 31% of municipal wastes were recycled; and in 2010, the European Commission reported that Lithuania failed to meet the 2010 target for biodegradable waste diversion from landfills. Things were not going well for the country in 2014, as it was reported that Lithuania could not identify which part of the separately collected packaging waste was generated by households and which by industries. Likewise, the amount of packaging waste collected by municipal waste collecting systems also could not be named.

However, EU structural and investment funds invested €190 million from 2007 to 2013 into waste management projects in Lithuania, and this resulted in a significant improvement. By 2018, Eurostat reported that Lithuania had jumped to the highest rate of plastic packaging recycling in the EU, recycling 69.3%.³¹

This can be in part attributed to a plastic bottle recycling deposit and return scheme introduced in 2016.³² Regulations introduced the requirement that all large stores selling recyclable products, mainly grocery stores, must provide “reverse vending machines” for plastic waste, and this has been very successful.³³

³⁰ Malinauskaite, J., Jouhara, H., Czajczyńska, D., Stanchev, P., Katsou, E., Rostkowski, P., Thorne, R.J., Colon, J., Ponsá, S., Al-Mansour, F. and Anguilano, L., 2017. Municipal solid waste management and waste-to-energy in the context of a circular economy and energy recycling in Europe. *Energy*, **141**, pp.2013-2044.

³¹ Eurostat, “More than 40% of EU Plastic Packaging Waste Recycled.” More than 40% of EU Plastic Packaging Waste Recycled - Products Eurostat News Eurostat, 13 Jan. 2021, <https://ec.europa.eu/eurostat/web/products-eurostatnews/-/ddn-20210113-1>.

³² Vlessing, Z.M., 2021. Sustainable Development in Lithuania: An Emerging Market Case Study.

³³ Hazlegreaves, Steph. “Recycling: Lithuania Deposit System Exceeds All Expectations.” Open Access Government, 24 Apr. 2018 <https://www.openaccessgovernment.org/recycling-lithuania-deposit-system-exceeds-all-expectations/45003/>

4. SOME CONCLUDING POINTS

1. ZWAI supports the revision of the WSR rules. We welcome the decision to reduce waste exports from the EU to developing countries.
2. ZWAI supports the assertion that wastes diverted from export can have a positive economic value and reduce dependence on primary raw materials, supporting the change to a more circular economy.
3. However, any changes made to the WSR should align with the objectives of the Circular Economy Action Plan (CEAP).
4. ZWAI is critical of the non-specific “circular economy” approach of the WSR. Diversion of MSW to incineration must be avoided. Burning of MSW is not compatible with a sustainable circular economy.
5. ZWAI is critical of the definition of waste burning as “recovery” in Article 3 of Directive 2008/98/EC.
6. ZWAI would like to highlight the assertion in Directive 2008/98/EC: *“Member States should support the use of recyclates, such as recovered paper, in line with the waste hierarchy and with the aim of a recycling society, and should not support the landfilling or incineration of such recyclates whenever possible.”*
7. Regulation and inspection of waste transport within the EU must be strictly maintained to minimise waste contamination and minimise introduction of persistent organic pollutants and heavy metals to municipal solid waste incineration (MSWI) systemisation.
8. ZWAI is very concerned about the lack of control of the movement of waste within Ireland.
9. ZWAI is very concerned about the decreasing level of waste reporting by industry in Ireland as a result of changes made by the Environmental Protection Agency (EPA) in the Annual Environmental Report (AER) requirements for industry.

This submission was researched and written by three members of Zero Waste Alliance Ireland: Jack Coffey (member and researcher), Orla Coutin (researcher and membership secretary), and Jack O’Sullivan (founder member and Director).

January 2022

In preparation

Roadmap

Feedback period

11 March 2020 - 08 April 2020

FEEDBACK: CLOSED

Public consultation

Consultation period

07 May 2020 - 30 July 2020

FEEDBACK: CLOSED

Commission adoption

Feedback period

19 November 2021 - 17

January 2022

FEEDBACK: OPEN

About this initiative

Appendix I – Invitation to provide feedback on the Commission's proposed adoption of new rules on export of waste

Summary

As announced in the European Green Deal, the Commission intends to review the EU rules on waste shipments. The purpose of this review is to ensure how to facilitate that EU policy on waste shipments promotes recycling in the EU to support the transition to the circular economy. The review will also explore ways to reduce the export of waste, for example through:

- a better inspection system
- measures against illegal shipments
- and measures to avoid potential environment-and-health-related adverse effects on the environment and public health caused by shipments of waste to third countries outside the EU.

Topic

Environment

Type of act

Proposal for a regulation

Roadmap

FEEDBACK: CLOSED

Feedback period

11 March 2020 - 08 April 2020 (midnight Brussels time)

**Appendix 2 –
EU Feedback
page showing
ZWAI submission
received on 17-
Jan-2022**

Feedback reference	F2786606	
Submitted on	17 January 2022	
Submitted by	Jack O'SULLIVAN	
User type	Environmental organisation	
Organisation	<u>Zero Waste Alliance Ireland</u>	
Organisation size	Micro (1 to 9 employees)	
Transparency register number	417362640092-95	
Country of origin	Ireland	
Initiative	Waste shipments – revision of EU rules	12-Mar-2022

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