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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE
COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE**

**on the Member States' implementation of Council Directive 2006/117/EURATOM on
the supervision and control of shipments of radioactive waste and spent fuel
Fifth Report**

{SWD(2026) 287 final}

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1. INTRODUCTION

Council Directive 2006/117/Euratom⁽¹⁾ ('the Directive') lays down a Community system of supervision and control of transboundary shipments of radioactive waste and spent fuel to guarantee adequate protection of the population. It ensures that Member States are informed of any shipments of radioactive waste and spent fuel to or via their territory, obliging them to either give their consent to a shipment or to state their reasons for refusing it.

All Member States have transposed the Directive and have been reporting to the Commission about its implementation since 25 December 2011 and every three years afterwards in accordance with Article 20. The most recent reports submitted by the Member States covered the period from 2021 to 2023⁽²⁾.

As required by Article 20 of the Directive, the Commission has drawn up this summary report⁽³⁾ for the European Parliament, the Council and the European Economic and Social Committee based on the reports from the Member States and the opinion of the Advisory Committee⁽⁴⁾, which paid particular attention to the return of non-authorised shipments and undeclared radioactive waste⁽⁵⁾. This fifth Commission report covers authorisations of shipments of radioactive waste and spent fuel and related issues from 2021 to 2023, following up on the fourth⁽⁶⁾ and third reports⁽⁷⁾. The attached Staff Working Document sets out the data on which the conclusions of this report are based in more detail.

1.1. Context

All Member States produce radioactive waste, generated either at facilities such as nuclear power plants and research reactors or through activities such as radioisotope applications in medicine, industry, agriculture, research and education.

Nuclear reactor operations also generate spent fuel, i.e. nuclear fuel that has been irradiated in and permanently removed from a reactor core. Spent fuel can either be

(¹) Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel, OJ L 337, 5.12.2006, p. 21.

(²) The reports cover the period from 26.12.2020 to 25.12.2023 (authorisations). This was the fifth reporting cycle for all Member States except Croatia, for which it was the fourth since it joined the EU on 1 July 2013.

(³) Article 20(2) of the Directive requires the Commission to draw up a summary report in accordance with the procedure laid down in Article 21.

(⁴) The Advisory Committee was set up in 2007 as required by Article 21 of the Directive.

(⁵) Article 4 of the Directive.

(⁶) COM(2023) 77 final, Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee on Member States implementation of Council Directive 2006/117 Euratom on the supervision and control of shipments of radioactive waste and spent fuel, Fourth Report, 16.2.2023 and SWD(2023) 43 final.

(⁷) Report from the Commission to the Council and the European Parliament on progress of implementation of Council Directive 2011/70/Euratom and an inventory of radioactive waste and spent fuel present in the Community's territory and the future prospects, COM(2024) 197 final of 22.5.2024.

kept as a resource for reprocessing or discarded as radioactive waste for final disposal, with no plans for further use.

Nuclear energy accounted for 22.8% of the EU's electricity generation in 2023 ⁽⁸⁾, the last year of the reporting period, with 101 nuclear power reactors operating across 12 Member States ⁽⁹⁾. Gross electricity generation by nuclear power plants in the EU amounted to 619.6 TWh in 2023, an increase of 1.7% compared to 2022.

Pending their (re)processing or disposal, spent fuel and radioactive waste must be safely stored. This may involve shipping (i.e. moving) these materials from the sites where they were generated or managed. These practices occur in most Member States, regardless of the scale of their nuclear programmes. Shipments are mainly by road, rail or sea or, to a more limited extent, by air.

Imports and exports of radioactive waste and spent fuel, and their transit through one or more Member States, are also common practices in the EU.

2. LEGAL FRAMEWORK AND ITS IMPLEMENTATION

Safe and responsible management of radioactive waste and spent fuel, including their safe shipment in and outside of Member States, is a legal requirement under both international and Euratom law.

At international level, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management ('the Joint Convention') ⁽¹⁰⁾ is the main reference. Among other things, the Joint Convention aims to ensure the safety of transboundary movements (imports, exports and transit) of spent fuel and radioactive waste. Each contracting party involved in a transboundary movement must therefore take steps to ensure the Joint Convention and other binding international instruments, are complied with ⁽¹¹⁾. In addition to the Euratom Community, all its 27 Member States are contracting parties to the Joint Convention ⁽¹²⁾, demonstrating their commitment to ensuring a high level of safety, from generation to disposal, for spent fuel and radioactive waste.

At EU level, a comprehensive legal framework ensures that workers and the general public are protected from risks to their health due to ionising radiation from spent fuel and radioactive waste, including during shipments. The framework currently consists of the Directive in addition to Council Directive 2013/59/Euratom ('the Basic Safety

⁽⁸⁾ [Slight increase in nuclear power production in 2023 - News articles - Eurostat.](#)

⁽⁹⁾ Belgium, Bulgaria, Czechia, Spain, France, Hungary, the Netherlands, Romania, Slovenia, (Croatia), Slovakia, Finland, and Sweden.

⁽¹⁰⁾ The Joint Convention entered into force on 18 June 2001. It applies to spent fuel and radioactive waste from civilian nuclear reactors and applications and spent fuel and radioactive waste from military or defence programmes where such materials are transferred permanently to and managed under a civilian programme or a contracting party declares them to be spent fuel or radioactive waste for the Convention's purposes. It also applies to planned and controlled releases into the environment of liquid or gaseous radioactive materials from regulated nuclear facilities.

⁽¹¹⁾ Article 27 of the Joint Convention.

⁽¹²⁾ There are currently 93 contracting parties to the Joint Convention (05 March 2026) (https://www.iaea.org/sites/default/files/22/06/jointconv_status.pdf).

Standards Directive’)⁽¹³⁾ and Council Directive 2011/70/Euratom (‘the Radioactive Waste Directive’)⁽¹⁴⁾, both of which affect the Directive’s scope.

The Directive forms part of the Euratom nuclear and radiation safety rules, focusing in particular on authorisations and other procedural aspects of transboundary shipments of radioactive waste and spent fuel from civilian facilities and activities. Its overall objective is to strengthen the supervision and control of shipments of spent fuel and radioactive waste to ensure protection against the risk of exposure to ionising radiation.

The Directive applies in cases where:

- the country of origin or destination of the spent fuel or radioactive waste, or any country of transit, is a Member State of the Community; and
- the quantities and concentration of the spent fuel or radioactive waste in a shipment (referred to as a ‘consignment’ in the Directive) exceed the levels laid down in the Basic Safety Standards.

If a shipment cannot be completed or the conditions for shipment laid down in the Directive are not complied with, the competent authorities of the Member State of origin must ensure that the holder takes back the shipped material⁽¹⁵⁾, unless an alternative safe arrangement can be made. They must also ensure that the person responsible for the shipment takes corrective safety measures where necessary. The holder is liable for any costs arising in cases where the shipment cannot or may not be completed⁽¹⁶⁾.

Any refusal to authorise a shipment of spent fuel or radioactive waste needs to be justified based on the criteria set out in the Directive. Also, a refusal must not be made arbitrarily and must be founded on relevant national, Community or international law. A Member State’s decision to consent to or refuse a shipment must comply with the provisions of the Joint Convention and the Directive⁽¹⁷⁾ prohibiting exports of radioactive waste or spent fuel to a destination south of latitude 60° south, to an African, Caribbean or Pacific country or to a third country which does not have the resources to safely manage radioactive waste or spent fuel.

In addition to reporting to the Commission every three years, Member States are required to inform the Commission and the Advisory Committee of any unauthorised shipments to third countries on a yearly basis⁽¹⁸⁾. They must also give the Commission

⁽¹³⁾ Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom, OJ L 13, 17.1.2014, p. 1.

⁽¹⁴⁾ Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste, OJ L 199, 2.8.2011, p. 48.

⁽¹⁵⁾ Holder means any natural or legal person who, before carrying out a shipment of radioactive waste or spent fuel, is responsible under the applicable national law for such materials and plans to carry out a shipment to a consignee (Article 5(9) of the Directive).

⁽¹⁶⁾ Article 12 of the Directive.

⁽¹⁷⁾ Article 16 of the Directive.

⁽¹⁸⁾ Article 16(1)(c) of the Directive.

the contact details of their competent authority or authorities together with any information that is necessary to rapidly communicate with them ⁽¹⁹⁾.

2.1. Implementation of the Directive

The Directive requires the use of a standard document ⁽²⁰⁾ for all shipments within the scope of the Directive; this includes imports, exports and transits between Member States and shipments from and to third countries. A standard document was drawn up by a Commission decision ⁽²¹⁾ and subsequently amended ⁽²²⁾. It includes forms for the following purposes:

- application for authorisation to ship spent fuel or radioactive waste (Section B-1 or A-1);
- acknowledgement of receipt of application – request for missing information on the spent fuel or radioactive waste (Section B-2 or A-2);
- consent to or refusal of spent fuel or radioactive waste shipment by the competent authorities concerned (Section B-3 or A-3);
- authorisation of spent fuel or radioactive waste shipment(s) (Section B-4a or A-4a);
- refusal of spent fuel or radioactive waste shipment(s) (Section B-4b or A-4b);
- description of the spent fuel or radioactive waste consignment and list of packages (Section B-5 or A-5);
- acknowledgement of receipt of the spent fuel and/or radioactive waste (Section B-6 or A-6).

When such materials are intended to be shipped to third countries for disposal, Member States are also required, under Article 4(4) of the Radioactive Waste Directive, to apply the criteria for shipment laid down by the Commission in a Recommendation ⁽²³⁾ pursuant to Article 16(2) of the Directive. One Member State refused authorisation based on this requirement in the reporting period (see Section 3).

No major issues with using the standard document were reported. However, one Member State suggested that the document include the shipment number(s) of previous shipments to make it possible to cross-reference any return shipments with previous authorisations/consents. This would make overall monitoring easier.

The Commission noted that there is scope for further improving and harmonising how standard documents are managed, an issue also raised by a Member State. One way to

⁽¹⁹⁾ Article 18 of the Directive.

⁽²⁰⁾ According to Article 17 of the Directive.

⁽²¹⁾ Commission Decision of 5 March 2008 establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel referred to in Council Directive 2006/117/Euratom, (notified under document number C(2008) 793), (2008/312/Euratom), OJ L 107, 17.4.2008, p. 32.

⁽²²⁾ Corrigendum to Commission Decision 2008/312/Euratom of 5 March 2008 establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel referred to in Council Directive 2006/117/Euratom, OJ L 343, 23.12.2011, p. 149.

⁽²³⁾ Commission Recommendation of 4 December 2008 on criteria for the export of radioactive waste and spent fuel to third countries (notified under document number C(2008)7570) (2008/956/Euratom).

improve the exchange of information in general, and standard documents in particular, could be to develop an electronic tool specifically for this purpose.

2.2. Opinion of the Advisory Committee

The Advisory Committee discussed the draft report and Staff Working Document at its 13th meeting in Luxembourg on 29 September 2025. The meeting concluded with a positive opinion.

2.3. Competent authorities

As of January 2025, all Member States have provided up-to-date information on their competent authorities under Article 18 in conjunction with Article 5(13) of the Directive ⁽²⁴⁾. The list of competent authorities is attached to the Staff Working Document.

3. OBSERVATIONS

The Commission noted that no shipment failures involving transboundary movements of radioactive waste or spent fuel had been reported by Member States in the current reporting cycle.

It concluded, based on the fact that no issues had been reported that could fall under Article 4 '*Reshipment related to non-authorised shipments of undeclared radioactive waste*', Article 12 '*Shipment failure*' or Article 16(1)(c) '*Prohibited exports*', that no unauthorised shipments had taken place in the EU during the reporting period.

There were two cases of refusal to grant consent.

- One Member State reported that it had refused an application for authorisation to dispose of radioactive waste (contaminated soil) in the United Kingdom. The application was rejected following refusal by the UK authorities.
- One Member State reported that it had refused an application at the consignee's request. The consignee had received materials with higher radioactivity levels than those declared by the holder on an earlier occasion and wished to investigate the cause of this discrepancy before importing more radioactive waste from the same holder.

The following 10 Member States did not report any authorisations for the shipment of radioactive waste on their territory in the reporting period: Croatia, Cyprus, Estonia, Greece, Ireland, Latvia, Lithuania, Malta, Poland and Portugal. Three of them – Croatia,

⁽²⁴⁾ Article 5(13) of the Directive defines 'competent authorities' as 'any authority which, under the law or regulations of the countries of origin, transit or destination, are empowered to implement the system of supervision and control of shipments of radioactive waste or spent fuel'. Article 18(2) of the Directive requires Member States to regularly forward to the Commission any changes to the name(s) and the address(es) of the competent authority or authorities.

Cyprus and Malta – have not reported any shipment authorisations since 2009, i.e. since the entry into force of the reporting obligations under the Directive.

The Staff Working Document attached to this report gives more detailed information on transboundary shipments of radioactive waste and spent fuel in the EU during the current reporting period.

3.1. Statistics

This section provides a statistical overview of authorisations and shipments.

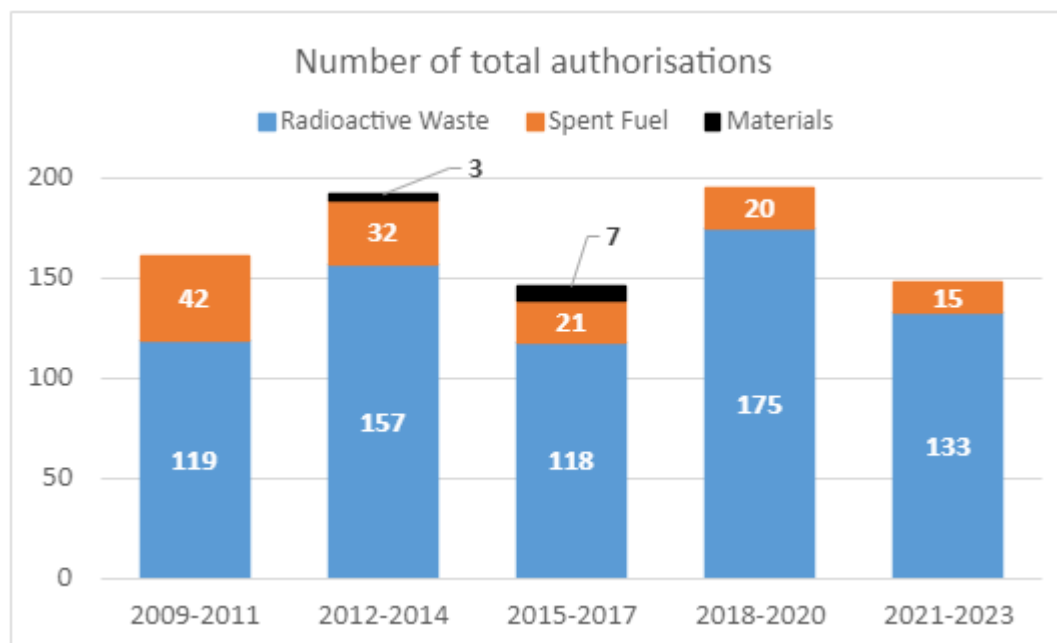


Figure 1. Total number of authorisations

The 148 authorisations reported by 17 Member States in the period from 2021 to 2023 correspond to 1 220 authorised shipments. An authorisation usually covers several shipments and may well remain valid beyond the reporting period.

The number of authorisations reported was lower than in the previous period and one of the lowest since the start of reporting under the Directive in 2009 (Figure 1). The number of shipments also fell compared to the previous reporting cycle (Figure 2). The UK's withdrawal from the EU partly explains this trend.

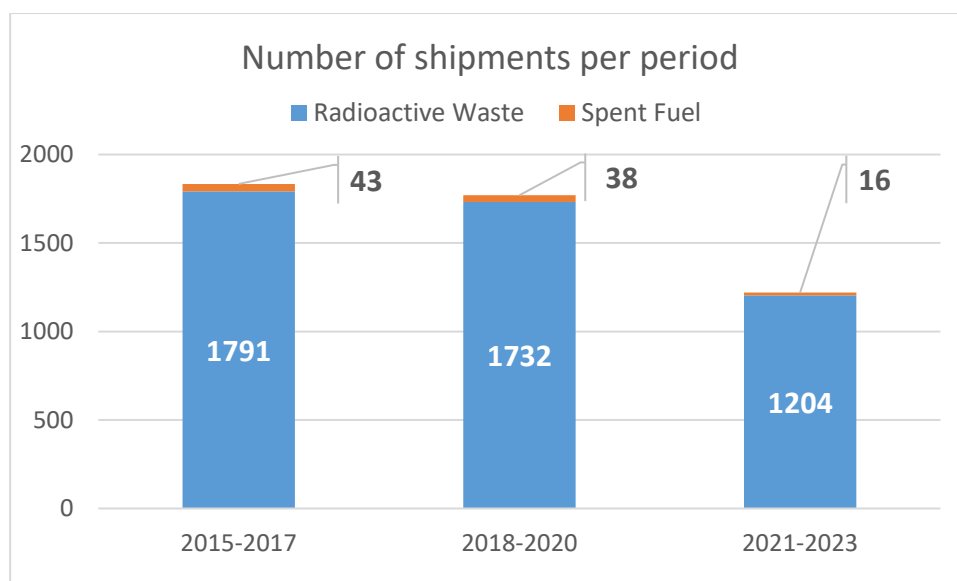


Figure 2. Number of authorised shipments

Authorised shipments can be broken down by radioactive waste, accounting for 99% (1 204 shipments) and spent fuel, accounting for 1% (16 shipments).

In previous reporting periods, most authorisations and shipments pertained to intra-Community movements. In the period from 2021 to 2023 this changed, mainly due to the UK's leaving the EU, which meant that numerous intra-Community shipments became imports/exports. Overall, 40% of authorised shipments were intra-Community (MM), while 10% were exports (ME) and 50% imports (IM).

Statistics show that 80% of all intra-Community shipments of radioactive waste originated from the nuclear industry and 20% from non-nuclear activities (for example, medicine or research).

The main purposes of the shipments were the processing of radioactive waste (such as treatment for volume reduction, or conditioning) in special facilities and returns of processed radioactive waste or spent fuel to the country of origin. Belgium, Sweden and Germany issued the highest number of authorisations, both as country of origin and as country of destination.

Movements of spent fuel or fuel fragments were mainly intended for reprocessing, scientific research or post-irradiation examination.

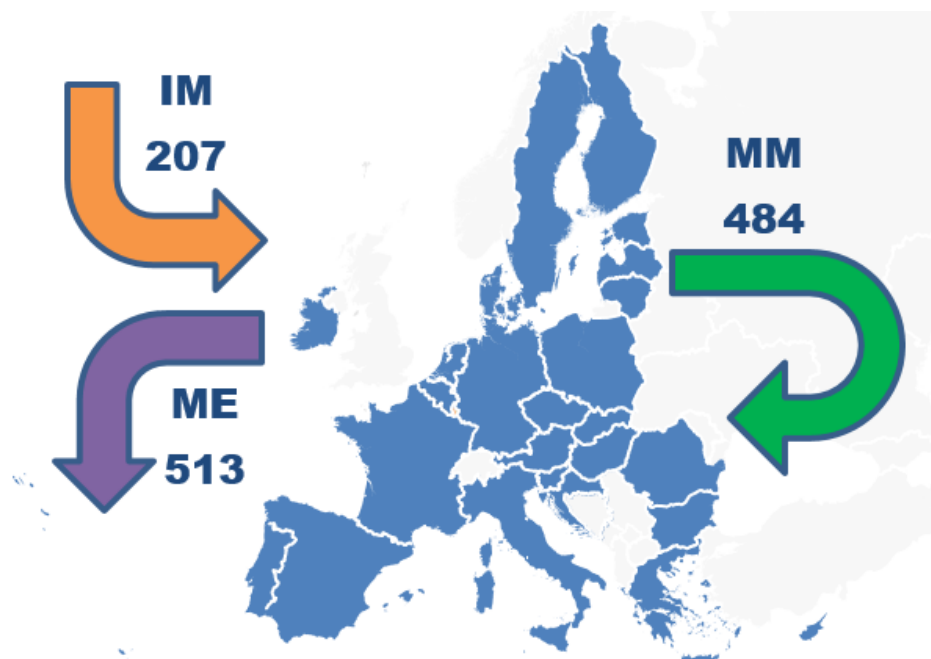


Figure 3. Number of authorised shipments of radioactive waste, intra-Community (MM), exports (ME), imports (IM)

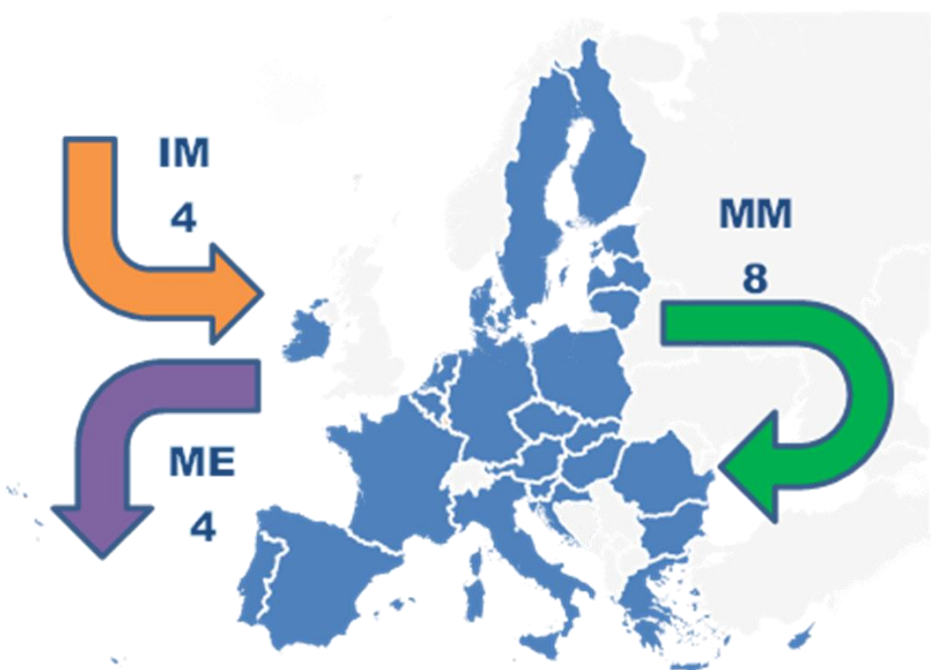


Figure 4. Number of authorised shipments of spent fuel, intra-Community (MM), exports (ME), imports (IM)

SHIPMENTS OF SPENT FUEL AND RADIOACTIVE WASTE:

TO THIRD COUNTRIES

MSs (AUTHORISING THE SHIPMENT)

-  BELGIUM
-  BULGARIA
-  GERMANY
-  ITALY
-  SLOVENIA
-  SWEDEN

FROM THIRD COUNTRIES

MSs (AUTHORISING THE SHIPMENT)

-  FRANCE
-  GERMANY
-  SWEDEN

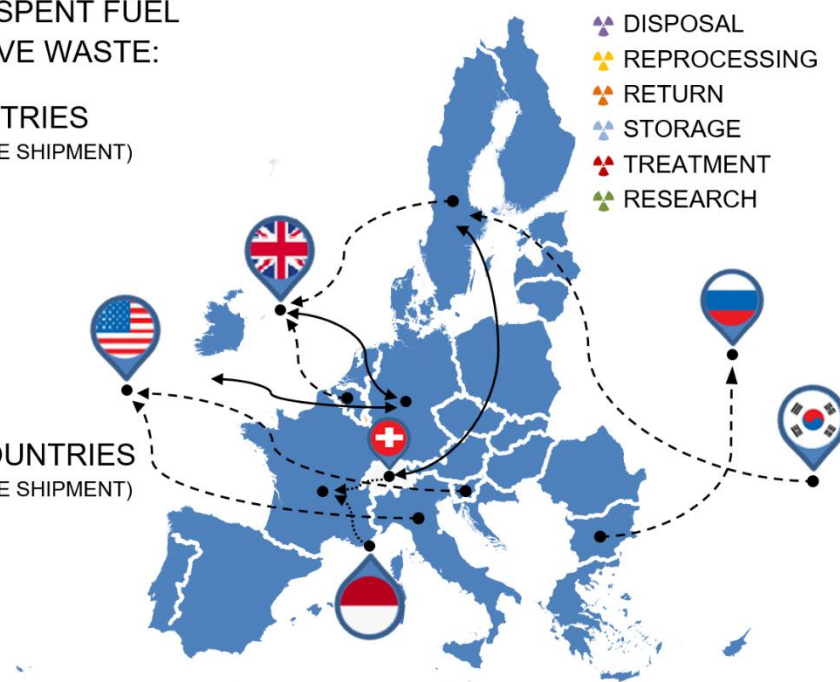


Figure 5. Extra-Community shipments 2021-2023

3 Member States issued 8 authorisations to import up to 607 shipments of radioactive waste from third countries from 2021 to 2023. These imports were for treatment, post-treatment returns and disposal of radioactive waste from the non-nuclear energy industry. 2 Member States issued 4 authorisations for imports of spent fuel, primarily for post-irradiation examination.

5 Member States issued a total of 15 authorisations to export 113 shipments of radioactive waste from the Community to third countries. These exports related to research, treatment, and return after treatment/reprocessing; none was for final disposal in a third country. 2 Member States issued a total of 3 export authorisations for 4 shipments of spent fuel to a third country. These exports were for reprocessing, return to the owner after reconditioning, and post-irradiation examination.

No transits originating from outside the Community with a third country as their final destination were authorised during the 2021-2023 reporting period.

4. FOLLOW-UP AND CONTINUOUS IMPROVEMENT

Previous Commission reports on the Directive's implementation highlighted the need for greater consistency between the standard document and the reporting template. Based on a proposal from a Member State, the Commission proposed a revision of the reporting template in line with Articles 17(2) and 21 of the Directive, so that it now includes information on authorisation registration numbers (ARNs) and references to initial shipments. The standard document was then updated in line with the reporting template. As a result, the Member States will be able to link return shipments to earlier

shipments. In addition, following a suggestion by two Member States, the Commission has issued an editable digitalised version of the standard document.

These changes have improved the cross-referencing of interconnected shipments and made reporting easier.

A need for better communication and a more harmonised way of managing standard documents was identified during the reporting cycle. The lack of a formal procedure for exchanging information could put the proper monitoring of the authorisation process at risk and lead to inconsistencies in reporting. For example, there have been cases of transit countries giving their consent to an authorisation not yet granted or no longer valid because they had not been informed of its date of issue or cancellation, which led to inconsistent reporting. As a solution, it has been proposed to develop an electronic tool for the exchange of standard documents between Member States.

The Commission acknowledges the need for better communication between Member States and for keeping transit countries better informed of transit procedures.

5. CONCLUSIONS

The Directive was correctly implemented. Use of the standard document ensured that all transboundary movements of radioactive waste and spent fuel in the Community took place with the prior consent of the competent authorities of the Member States concerned, including transit countries. During the three-year reporting period, the Commission received information on authorised shipments on a regular basis from all Member States. This ensured supervision and control of shipments of radioactive waste and spent nuclear fuel throughout the Community. Use of the reporting template, while not mandatory, helped streamline data collection and minimise the risk of misinterpretation. Its continued use is therefore highly recommended.

Overall, the Commission concludes that the current Euratom legal framework, consisting of the Directive, the Basic Safety Standards and the Radioactive Waste Directive, ensured the highest possible safety levels for transboundary shipments of radioactive materials in the Community, keeping the risks from ionising radiation to a minimum. Nonetheless, the Commission notes that possible differences in how the Member States define radioactive waste may give rise to some issues in the information and consent process.

In its past report on the implementation of the Radioactive Waste Directive ⁽²⁵⁾, the Commission presented the intention to carry out an evaluation of that directive. After 18 years of implementation of the Directive, the Commission also intends to evaluate the Directive in conjunction with the Radioactive Waste Directive. This would make it possible to simplify and streamline simplification measures under the two Directives.

⁽²⁵⁾ Report from the Commission to the Council and the European Parliament on progress of implementation of Council Directive 2011/70/Euratom and an inventory of radioactive waste and spent fuel present in the Community's territory and the future prospects, COM(2024) 197 final of 22.5.2024.