Opinion of the European Economic and Social Committee on the 'Proposal for a Council Directive on the management of spent fuel and radioactive waste'

COM(2010) 618 final

(2011/C 218/28)

Rapporteur: **Mr ADAMS**

On 1 February 2011 the Commission decided to consult the European Economic and Social Committee, under Article 304 of the Treaty on the Functioning of the European Union, on the

Proposal for a Council Directive on the management of spent fuel and radioactive waste

COM(2010) 618 final.

The Section for Transport, Energy, Infrastructure and the Information Society, which was responsible for preparing the Committee's work on the subject, adopted its opinion on 29 March 2011.

At its 471st plenary session, held on 4 and 5 May 2011 (meeting of 4 May 2011), the European Economic and Social Committee adopted the following opinion by 146 votes to 7 with 8 abstentions.

1. **Conclusions and Recommendations**

1.1 *Conclusions*

1.2 This Directive has been in process for more than ten years and is welcomed by the Committee as a clear step forward in requiring the planned management of the existing large volume of radioactive waste across the EU to minimum standards.

1.3 There is an encouraging emphasis on transparency and public engagement and the requirement to forecast both the cost and funding of proposals will provide a key analytical tool. For the first time, internationally agreed safety standards will become legally binding and enforceable in the European Union. The EU should cooperate with neighbouring countries and encourage them to adopt similar safety standards.

1.4 But the development path of this Directive has not been straightforward. The limits to scientific certainty remain in dispute and the difficulty of anticipating political and social scenarios far into the future are apparent to all.

1.4.1 Although there is broad scientific consensus on the general technical feasibility of deep geological disposal there is a continuing debate about the degree of scientific certainty or appropriateness in several areas. This is unlikely to be fully resolved to the satisfaction of all stakeholders particularly because of the intrinsic nature of high level radioactive waste, its interaction with its immediate environment and the geological time periods under consideration. The present 'holding' arrangements are clearly unsustainable in the medium term, reinforcing the need for action.

1.4.2 Lively and unresolved discussions continue about what is an appropriate level of safety and risk. What does giving the highest priority to human and environmental safety actually involve? In practice the demonstration of safety will be a combination of qualitative and quantitative arguments, seeking to minimise uncertainties, in the context of national decision making.

1.4.3 Confidence in the projection of political and institutional coherence and the competence of any management system must logically decrease as the time scale extends. Therefore 'passive' safety becomes a strong element, with a requirement to be effective even when oversight and knowledge about a waste repository have been lost over time.

1.4.4 The continuing contribution and development of fission-based nuclear energy as part of the energy mix of member states is to some degree dependent on public acceptance as well as on financial sustainability. The debate on the use or development of nuclear power is a significant distraction to resolving the immediate and urgent need to deal with the accumulating problem of radioactive waste, especially as the current and ongoing decommissioning programmes for nuclear power stations will contribute to the scale of the problem. Public attitudes vary considerably across the EU but a large majority of Europeans do believe it would be useful to have a community instrument on radioactive waste management (Attitudes towards radioactive waste. Eurobarometer June 2008).

1.5 The Committee, therefore, seeks to approach constructively the ambivalence in public attitudes and presents a number of relevant recommendations to reinforce the Commissions determination to find a solution.

1.6 *Recommendations*

1.6.1 The Committee has put forward a series of specific comments, suggestions and recommendations in sections 4 and 5 of this Opinion and asks the Commission, Parliament and Council to take full account of these. In addition it recommends more generally that:

— Member States recognise the prioritisation of safety in the provisions of the Directive and urgently and consistently transpose the Directive into national law in response to the pressing problem of accumulating radioactive waste;

— greater efforts are made by governments, the nuclear industry and the relevant scientific communities to provide further detailed, transparent, risk-assessed information on radioactive waste management options to the public as a whole.

2. **Introduction**

2.1 The issue of nuclear safety is currently attracting considerable attention and concern as a result of the impact of the earthquake and tsunami on four reactors at Fukushima in northern Japan. Safe operating conditions and precautionary measures for European nuclear plants are the subject of the Nuclear Safety Directive (see para. 5.6) and of national authorities of Member States. On 21 March Member States agreed to improve cooperation between their respective nuclear regulators and to request the European Nuclear Safety Regulators Group (ENSREG) to define modalities for the proposed stress tests (comprehensive risk and safety assessments) for all the EU's nuclear power plants. Given the deep concern expressed by the public as a result of the serious accident at the Fukushima Daiichi power plant the Committee, as a matter of urgency and transparency, will seek to be fully engaged in dialogue with civil society on this and related issues, particularly through an active reorientation of the ENEF (European Nuclear Energy Forum) Working Group on Transparency which the EESC currently chairs and involvement in the Working Groups on Opportunities and Risks.

2.2 From a technical perspective the consequences of the Fukushima accident have yet to be fully analysed as has any direct bearing on the radioactive waste Directive contained in this Opinion. However, it has understandably amplified public concern and awareness of nuclear safety issues and the Committee believes it can play a role in the ongoing debate.

2.3 As of November 2010 there were 143 nuclear power plants (reactors) operating in the EU in 14 Member States. In addition there are a number of plants which have been closed down and other nuclear facilities, such as spent fuel reprocessing plants, which generate radioactive waste. Each year the EU typically produces 280 cubic metres of high level waste, 3 600 tonnes Heavy Metal of spent fuel and 5 100 cubic metres of long lived radioactive waste for which no disposal routes exist (Sixth situation report on radioactive waste and spent fuel management in the European Union SEC(2008)2416); there are further occurrences of lower activity wastes much of which is routinely disposed. High-level waste (HLW) is highly radioactive, contains long-lived radionuclides and generates a considerable amount of heat. It accounts for 10 % of the volume of radioactive waste generated and contains about 99 % of the total radioactivity and includes fission products and spent fuel.

2.4 These wastes arise from the reprocessing of spent nuclear fuel, spent fuel destined for direct disposal, routine nuclear plant operations and decommissioning. Many more nuclear power plants are planned, some in Member States without previous experience of nuclear power generation. Unless the resultant waste, which in some cases, remains a threat for tens of millennia, is managed and overseen there are very significant risks to health, safety and security. By its nature, radioactive waste contains isotopes of elements that undergo radioactive decay, emitting ionizing radiation which can be harmful to humans and the environment.

2.5 Decisions taken this century will have implications a hundred centuries into the future. Dealing with the wastes arising from the nuclear fuel cycle is the main focus of the Directive but radioactive waste generated in research, medicine and industry will also be covered. Due to the increased generation of electricity from nuclear power stations high level waste grew on average by 1,5 % each year between 2000-2005 and the decommissioning of older power stations is now adding to the quantity. At the end of 2004, an estimated 220 000 cubic metres of long-lived low- and intermediate level waste, 7 000 cubic metres of high-level radioactive waste and 38 000 tonnes of Heavy Metal of spent fuel were stored in Europe (These figures are uncertain because in reprocessing countries such as the UK and France, spent nuclear fuel and reprocessed plutonium and uranium are not currently classified as nuclear waste, on the grounds that spent fuel is a recyclable material and that reprocessed uranium and plutonium might be used to make fresh fuel.)

2.6 It is 54 years since the first commercial nuclear power station became operational. There has been ongoing debate for all of that time about waste management. One area of general agreement is that temporary long-term storage is appropriate for the first phase of any solution. At present there are still no final repositories for higher activity nuclear waste in the EU, though Sweden, Finland and France all plan to have such repositories operational by 2025. The objective is to design and construct facilities which ensure long term safety through passively safe protection systems provided by engineered and stable geological barriers, with no reliance placed on monitoring, human intervention or institutional controls after the facility is closed. In the majority of states a definitive spent fuel policy does not exist or remains unimplemented, other than arrangements to ensure a safe extended period of storage of up to 100 years (Sixth situation report on radioactive waste and spent fuel management in the European Union SEC(2008)2416).

2.7 93 % of European citizens see an urgent need to find a solution to the problem of radioactive waste management, rather than leaving it for future generations. The great majority of EU citizens across all countries agree that the EU should harmonise standards and be able to monitor national practices (Attitudes towards radioactive waste. Eurobarometer June 2008).

2.8 Existing EU legislation was deemed inadequate. Directive 2009/71/Euratom has already established a Community framework for the nuclear safety of nuclear installations, supported by all 27 EU Member States and this Directive on radioactive waste management (COM(2010) 618) is the logical next step.

2.9 The energy mix of each member state and its choice about the use of nuclear power is a national competence and is not the subject of this Directive. However, nuclear waste is inseparable from the use of nuclear power, it exists in significant volume and it potentially poses a serious, long-term, transnational threat. Even if the operation of nuclear power stations were halted today we have to deal with the waste that already exists. It is in the interests of all EU citizens that radioactive waste is disposed of in as safe a way as possible. This is the context in which the Commission has proposed a Directive establishing a framework for ensuring responsible management of spent fuel and radioactive waste.

2.10 The Committee last considered this issue in 2003 ([1]) emphasising the need for urgency in the light of enlargement and the importance of the 'polluter pays' principle. The proposed Directive, which was the subject of the 2003 Opinion, was not approved as Member States considered some aspects too prescriptive and required further time for consideration.

3. **Summary of the proposed Directive**

3.1 Member States are required, within four years of adoption of the Directive, to draw up and present national programmes, indicating the current location of the wastes and plans for their management and disposal.

3.2 There will be a legally binding and enforceable framework to ensure that all Member States will apply the common standards developed by of the International Atomic Energy Agency (IAEA) for all stages of spent fuel and radioactive waste management up to final disposal.

3.3 National programmes shall include radioactive waste inventories, management plans from generation to disposal, post-closure plans for a disposal facility, R&D activities, implementation timeframes and milestones and the description of all the activities that are needed to implement the disposal solutions, costs assessments and the financing schemes chosen. The Directive does not stipulate a preference for one particular form of disposal.

3.4 The proposed Directive contains a transparency Article to ensure the availability of information to the public and their effective participation in the process of decision making on certain aspects of radioactive waste management.

3.5 Member States would report to the Commission on the implementation of these requirements, and subsequently the Commission will submit a report to the Council and the European Parliament on progress made. Member States will also invite an international peer review of their national programme which will also be reported to the Member States and the Commission.

4. **General Comments**

4.1 In this Opinion the Committee is primarily addressing the practical and urgent problem of the existence, and continued production, of radioactive waste. The greater proportion of this waste (over 90 %) results from activities associated with nuclear energy generation. The option to choose or expand nuclear power as part of the energy mix is at the discretion of each Member State but the long term implications of resulting waste management can have trans-border (and trans-generational) implications.

4.2 Public opinion towards nuclear power in countries with nuclear power stations would be significantly affected (in favour of nuclear power generation) if they could be assured that there was a safe and permanent solution for managing radioactive waste (Attitudes towards radioactive waste. Eurobarometer June 2008). The main obstacles to such reassurance are the long-term danger from high level waste, doubts about the safety of deep geological disposal, whether the risk attached to such sites will be preserved in the public memory for future generations and uncertainty about the feasibility of other disposal methods.

4.3 Given the slow progress in some Member States on proposals for the long term management of radioactive waste the proposed Directive, which itself has been some years in development, should serve to stimulate the comprehensive formulation of national management programmes. Examples now exist of good methodology which can be used for reference. The proposed Directive is seeking to make key aspects of the standards concluded under the auspices of the International Atomic Energy Agency (IAEA) legally binding and enforceable through EU law and the Committee welcomes this approach.

4.4 The EU already has a significant body of legislation on waste, including hazardous waste ([2]). Although the Directive makes it clear that it is not building on this legislation but has a different legal basis, chapter 3 of the Euratom treaty, opportunity should be taken in the recitals to the proposed directive to endorse the principles embodied in the existing corpus of law relating to hazardous waste.

4.5 The 'polluter pays' approach, has been qualified with the requirement to ensure that waste management proposals are adequately and securely funded, 'taking due account of the responsibility of radioactive waste producers'. Questions concerning state cross-subsidy and consequently issues of competition in the energy market may therefore arise. The Committee therefore recommends that the Directive unequivocally affirms that financing waste management should be according to the 'polluter pays' principle (in this case the company generating the radioactive waste through the operation of nuclear reactors) other than in situations of force majeure, when the state may need to intervene.

([1]) OJ C 133, 6.6.2003, p. 70.

([2]) OJ L 377, 31.12.1991, p. 20.

4.6 The Committee notes that only civilian radioactive waste is covered under the provisions of this Directive. In some countries significant resources have been made available for the management of military radioactive waste. There are clearly additional security implications of joint military/civilian programmes but as the management of non-civilian radioactive waste may consume substantial technological and financial resources, as well as disposal capacity in some Member States, more specific links with this Directive should be considered.

5. **Specific Comments**

5.1 Radioactive waste has been specifically excluded from the EU Waste Directives ([3]) but these contain many valuable principles which should be taken into account. The Committee therefore suggests that the recitals to present Directive should make specific reference to the Directive on Hazardous Waste (91/689/EEC) and state that it is complementary to it.

5.2 The Committee suggests that the clause in Article 2 which excludes 'authorised releases' should, in fact, cover such releases. There is presently no EU-wide consistency on the regulation of such releases, and due to variation of interpretation they remain contentious between Member States (for example, between the UK and Ireland concerning releases into the Irish Sea).

5.3 The Committee has always supported the prevention of waste as advocated by the EU and as prioritised under the Directive on Waste (2006/12/EC). As with a number of industries nuclear power generation gives rise to significant hazardous waste. Member states are, at present, divided over whether economically, socially and environmentally there will be sustainable alternatives to nuclear power and therefore as to whether radioactive waste must inevitably continue to be produced. To resolve this dilemma, and as the majority of the Committee shares the view that nuclear will need to play a part in Europe's transition to a low carbon economy, we suggest that the Directive expresses a preference to seek the elimination of the bulk of radioactive waste at source as improved and sustainable alternatives are developed.

5.4 Article 3.3 defines 'disposal' as the emplacement of spent fuel or radioactive waste in an authorised facility with no intention of retrieval. The Committee recognises there are divergent views on the issue of reversibility and retrievability of the waste. The Committee believes that in developing disposal concepts, reversibility and retrievability should not be excluded, concomitant with the provisions of the associated safety case.

5.5 Article 4.3 requires radioactive waste to be disposed of in the Member State in which it was generated, unless agreements are concluded between Member States to use disposal facilities jointly in one of them. The Committee recommends that this option be vigorously espoused in order to make optimal use of particularly appropriate sites. The Committee welcomes this unequivocal approach to both manage radioactive waste generated by member states exclusively within the EU and the opportunity to develop shared facilities. It was noted that this does not exclude the repatriation of reprocessed waste arising from the reprocessing of spent fuel to countries of origin outside the EU. However, for the avoidance of doubt, it is suggested this point is made explicit in either the Explanatory Memorandum or the Recitals.

5.6 The Committee queries whether a 10 year self assessment by Member States of their programme, accompanied by an international peer review (Article 16) offers the opportunity to fully consolidate knowledge and best practice. There is also the question as to whether a sufficient degree of objectivity, rigour and independent analysis will consistently be applied. Considerable reporting and associated costs will be incurred by Member States and the Committee considers that, in due course, a Review Board should be established with a remit to oversee the management of radioactive waste in the EU. This would not only enhance reporting standards and good practice but serve as an efficient cost-sharing mechanism and help underpin the Nuclear Safety Directive ([4]).

5.7 The Committee explicitly welcomes the fact that the Commission also intends to continue providing support for research on geological disposal of radioactive waste and coordinating research across the EU. The Committee stresses that these programmes should be promoted adequately and on a broad basis and calls on the Member States to address this issue in their national research programmes and through collaborative research through the Commission's R&D Framework programmes.

Brussels, 4 May 2011.

The President
of the European Economic and Social Committee
Staffan NILSSON

([3]) OJ L 312, 22.11.2008, p. 3.

([4]) OJ L 172, 2.7.2009, p. 18.

APPENDIX

to the Opinion of the European Economic and Social Committee

The following Section Opinion text was modified in favour of an amendment adopted by the assembly but obtained at least one-quarter of the votes cast:

Point 5.5

'*Article 4.3 requires radioactive waste to be disposed of in the Member State in which it was generated, unless agreements are concluded between Member States to use disposal facilities in one of them. The Committee welcomes this unequivocal approach to both manage radioactive waste generated by member states exclusively within the EU and the opportunity to develop shared facilities. It was noted that this does not exclude the repatriation of reprocessed waste arising from the reprocessing of spent fuel to countries of origin outside the EU. However, for the avoidance of doubt, it is suggested this point is made explicit in either the Explanatory Memorandum or the Recitals.*'

Outcome of the vote on the amendment:

67 votes in favour, 57 votes against and 26 abstentions.