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THE IMPLEMENTATION OF ENVIRONMENTAL AND SAFETY STANDARDS FOR THE NUCLEAR AND MINING WASTE MANAGEMENT IN ITALY. WHICH ROLE FOR THE PUBLIC REGULATORS?

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ABSTRACT

Waste management has been widely recognised as the biggest problem arising from the extraction and production of energy. The international framework very often proves to be unsuitable for creating common and binding standards for the States. In the European nuclear scenario, the Euratom Treaty has proved to be unsuitable to create common standards for nuclear waste management, but it has given the possibility for the growth and consolidation of the model of nuclear safety authority which, as in Italy for example, has succeeded in encouraging nuclear waste policies with the definition of a plan for spent fuel management. On the other hand, mining waste where, despite European pressure, the creation of an independent regulator is still a long way off, leaving mining policies at a standstill. If the nuclear safety authority has

proven its efficacy in boosting nuclear policies, this is the moment to mirror this model in the mineral sector too.

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ABBREVIATIONS

EU: European Union

ISIN: National Inspectorate for Nuclear Safety and Radiation Protection

ISPRA: Higher Institute for Protection and Environmental Research

MS: Member States

MW: mineral waste

MWM: mining waste management

NNP: nuclear power plant

NSA: nuclear safety authority

NW: nuclear waste

NWM: nuclear waste management

RW: radioactive waste

SF: spent fuel

TEU: Treaty on the European Union

TFEU: Treaty on the Functioning of the European Union

1. Introduction

Waste management is one of the main concerns of the entire energy sector. The creation of an effective regulatory framework is one of the main purposes not only to provide guidelines to the stakeholders but also to keep safe citizens from potential harmful occurrences. For this reason, regulation is placed in a system of multi-level governance where many Institutions vertically are called to cooperate in order to adopt the same and best standards for the waste disposal. Since the Euratom Treaty, European Institutions are trying to boost a common European nuclear market where energy generation and distribution balance themselves with the environmental protection. This paper will examine the Euratom provisions concerning radioactive spent fuel and its governance as the "wicked"[1] problem that policy makers must handle. But the Euratom Treaty has also been highly criticized for its formal attempts to create common rules and standards without providing any non-compliance sanction instruments for Member States. Keystone of this analysis is the role of public regulators as guarantors and implementors of the regulatory framework. For the nuclear waste management national safety authorities play a fundamental role in this sense introducing new management skills and dealing with the problem of the spent fuel and of its disposal. Some countries wait for the evolution of the technology keeping the spent fuel in the original nuclear plants under the cooling process; others opt for the reprocessing process through which at least the

[1] Rittel, H., and Webber, M. M. (1973). Dilemmas in a General Theory of Planning, (1973) 4 Policy Sciences,155-169

90% of the spent fuel is recycled for further electricity generation with the benefit of reducing the degree of radioactivity from high level to intermediate or low. But if for the low and intermediate level of radioactive waste the storage takes place in the related nuclear plants, for the high level waste, the disposal requires high tech sites able to contain the radioactivity and to avoid any contact with the biosphere and the environment. This is the Italian scenario which will be further analysed in this paper with all the attempts by the stakeholders to accomplish the disposal operations with the planification of a huge deposit mainly for the high-level radioactive waste. In this contest the Italian nuclear safety authority guides all the operative stages ensuring that all the safety and environmental standards are respected. The paper continues with a comparative analysis with the European scenario of mining waste management. While for radioactive waste the central role of the nuclear safety authority has proved to be fundamental in channelling nuclear policies towards meeting European targets, in the mining sector, Italy has failed to comply with the presence of an independent regulator as required by European directives failing to stimulate its policies on the management of mining waste. It is clear how the role of national regulators is becoming more and more relevant in guiding national policies and in achieving supranational standards. Will be the model of an independent regulator the keystone in solving regulatory problems in waste management from energy activities.

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adopt the same and best standards for the waste disposal. In the European Union has been widely recognized the importance of nuclear generation as one of the most valid alternatives to hydrocarbons. Since the Euratom Treaty, European Institutions are trying to boost a common European nuclear market where energy generation and distribution balance themselves with the environmental protection. This paper will examine the Euratom provisions concerning radioactive spent fuel and its governance as the "wicked"[2] problem that policy makers must handle. But the Euratom Treaty has also been highly criticized for its formal attempts to create common rules and standards without providing any non-compliance sanction instruments for Member States. Keystone of this analysis is the role of public regulators as guarantors and implementors of the regulatory framework. Which is their role in the new scenario of spent fuel management? How the Euratom Treaty deal with them? Can the implementation of supranational safety and environmental standards bring to the creation of new best practices? For the nuclear waste management national safety authorities play a fundamental role in this sense introducing new management skills. The problem of the spent fuel and of its disposal is actual because the technology is not completely developed to support and to find a resolutive solution for the radioactive waste. The scientific community knows that the only way to handle this kind of waste is to deposit it in special trenches where to wait its decay. But despite the several studies and recent approved projects for disposal sites, we still do not have these facilities. Some countries wait for the evolution of the technology keeping the spent fuel in the original nuclear plants under the cooling process; others opt for the reprocessing process through

[2] Rittel, H., and Webber, M. M. (1973). Dilemmas in a General Theory of Planning, (1973) 4 Policy Sciences,155-169

which at least the 90% of the spent fuel is recycled for further electricity generation with the benefit of reducing the degree of radioactivity from high level to intermediate or low. But if for the low and intermediate level of radioactive waste the storage takes place in the related nuclear plants, for the high level waste, the disposal requires high tech sites able to contain the radioactivity and to avoid any contact with the biosphere and the environment. This is the Italian scenario which will be further analysed in this paper with all the attempts by the stakeholders to accomplish the disposal operations with the planification of a huge deposit mainly for the high-level radioactive waste. In this contest the Italian nuclear safety authority guides all the operative stages ensuring that all the safety and environmental standards are respected. The paper continues with a comparative analysis with the European scenario of mining waste management. While for radioactive waste the central role of the nuclear safety authority has proved to be fundamental in channelling nuclear policies towards meeting European targets, in the mining sector, Italy has failed to comply with the presence of an independent regulator as required by European directives failing to stimulate its policies on the management of mining waste. It is clear how the role of national regulators is becoming more and more relevant in guiding national policies and in achieving supranational standards. Will be the model of an independent regulator the keystone in solving regulatory problems in waste management from energy activities?

2. Euratom and the management of nuclear waste

The Euratom treaty[3] has been in force since 1957 when it established the European Atomic Energy Community. The first attempts of European cooperation have been built on this treaty which tried to regulate nuclear generation finding common standards for all MS and minimizing the potential radiation exposure and the environmental impact. This attempt of creating a real cooperative system where States follow the same guidelines under common binding obligations[4] has already been made through the Joint Convention of 1997[5]. But the Euratom application seems to have produced different effects mainly because the central concern of the Treaty seems to be commercial[6]. Euratom's focus relies on the attempt of guaranteeing the technological development of research, the equal distribution of sources and the creation of a single nuclear market[7]. So, dealing with nuclear waste was not its first aim and the Treaty showed to be unprepared to deeply face the current challenges of the management of radioactive materials with effective regulatory instruments. The truth is that the Treaty does not have any real domestic impact on the nuclear energy policies. The safety standards seem to have been developed within the Treaty, but it is only through the national

[3] Consolidated version of the Treaty establishing the European Atomic Energy Community 2012/C 327/01
[4] Miguel Sousa Ferro, 'The future of the regulation of nuclear safety in the EU' [2008] X(Y) Int J Nuclear Law
[5] Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 29 September 1997
[6] Samuel B Angus, 'Radioactive Waste and Euratom: Towards a More Effective Regime of Regulation' (1993) 16 Hastings Int'l & Comp L Rev 343.
[7] Ibid

regulation that these provisions can be enforced and implemented. In examining some of the Treaty provisions it is possible to notice the huge amount of discretion has been given to the MS. In fact, they are free to interpret the safety standards without any measures in case of non-compliance. These considerations can be supported by reading the main articles of the Euratom focusing on nuclear safety and on the governance of nuclear spent fuel. In fact, chapter III on health and safety focuses on common standards for the disposal of nuclear spent fuel, on the EC role and on the exercise of its powers of control over all the legal acts adopted by the MS. In fact, art. 35 argues that MS shall indicate the infrastructures for the storage of the waste monitoring its radioactivity; art.37 relies on the obligation upon MS to inform the EC of their nuclear waste strategies, especially any kind of potential impact on the environment and on a neighbouring territory. But this control carried out by the EC does not provide any binding guidance to MS, it is only an opinion with the aim to avoid any conflicts among States due to contamination or radiation exposure[8]. And even if the Court of Justice has ruled that each MS must strictly follow the EC considerations on the domestic disposal plans[9], it is not possible to state that Euratom nuclear safe standards are protected by binding rules and enforcement measures for non-compliance. Chapter VII on safeguard confirms the discretional role of MS. Art.77 states that the EC shall monitor MS radioactive materials checking that their disposal plans are undertaken without any diversions; art. 78 and 79 foresee the role of the EC in approving all the stages of the spent fuel reprocessing for countries which selected it and the duty upon MS to keep records of all the storage activities in order to enable the EC to control the accuracy of the information and data

[8] Ibid
[9] Case 187/87, Saarland v. Minister of Industry, 1988 E.C.R. 5013.

previously updated. It is clear how the EC role as the main Institution called to supervises the respect of Euratom provisions and guidelines is different from the role that the same EC plays in accordance with the TEU and the TFEU. If in these two Treaties the EC has a central role in monitoring the respect of rules with public enforcement measures, its role in the Euratom changes completely. This because the Euratom Treaty receives modifications only through the instrument of the Directive and not of Regulations in order to identify targets that MS must accomplish through their own legal framework. This Euratom feature allows MS to freely adopt much more discretion in their legal framework and to interpret the safety standards in a system where it seems there is no space left for cooperation and common practices.

2.1 The Directive 70/2011/Euratom

The Directive 70/2011/Euratom[10] is built on the IAEA non-binding provisions and on the recommendations envisaged in the Joint Convention. The Directive modifies and updates many of the Euratom provisions on NWM trying to boost the effectiveness of the Treaty and of the European cooperation. The unknown amount of period that the radioactive spent fuel needs for its decay is a common problem which unites all the MS and needs concerns such as safety, security, and radioactive exposure to be ranked first. Strict criteria for the selection of the storage and disposal areas have been introduced. Governments with the support of regulatory bodies and of all the

[10] 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

stakeholders involved in the NWM shall investigate the most suitable area for the repository site taking into consideration aspects such as seismic movements, hydrogeological structure, distance from civil and protected environmental areas. Chapter II Art.2 states that MS must regulate all the stages for the spent fuel treatment through a national plan on how the domestic legislation aims to enforce the governance over the NW; a national plan including the safeguard of the environment and the safety of citizens, a national plan system concerning inspections, controls over the site and all the activities; a national plan containing public enforcement measures in order to suspend or revoke the licences; distribution of liabilities among all the stakeholders involved from the licence holder to the regulatory body. Instead art. 6 has encouraged the need for the establishment of a nuclear safety authority in the form of an independent agency which must supervise the regulatory framework trying to implement the supranational recommendations in absence or delay of the legislative support. Despite being reconfirmed the central role played by the NSA, the Directive has been still found inadequate. In particular, the Directive has been criticized for not having set "hard" targets for MS and for not being aimed to the harmonisation of the European safety standards for the spent fuel management[11]. The Directive has been interpreted as a specular re-proposition of the Joint Convention and of the IAEA safety provisions[12]. Once again, the Euratom treaty showed the fundamental role played by MS and the great discretion given to them. Safety standards during NW activities seem to have returned to the centre of attention of the European policies where the health of the workers and the non-contamination of the biosphere are

[11] Maria Rosaria Di Nucci and Ana Maria Isidoro Losada, An Open Door for Spent Fuel and Radioactive Waste Export? The International and EU Framework In Nuclear Waste Governance: an International Comparison (Springer 2015) 79-100.
[12] Ibid

ranked first[13]. Despite it has been strongly criticized the marginal role and the ineffectiveness of the Euratom nuclear policies, this scenario paved the way for the growth of MS sovereignty and discretion in designing the regulatory framework, especially through the nuclear safety authorities which have been played a fundament role in the implementation of supranational safety standards.

2.2 The role of the nuclear safety authorities in the implementation of environmental and safety provisions.

Regulation in the nuclear field is of multi-level concern and it is framed at an international, domestic, and regional level. It is the national regulative framework the most incisive one which guide all the stakeholders imposing binding obligations and duties. If the transposition of the supranational guidelines takes place through the legislative activity of the Parliament, the control and monitor of the regulative framework is fulfilled by special bodies, called regulatory authorities. In the NW sector the authorities called for these tasks are the NSA. If in many countries is a department of the Energy Minister to fulfil these tasks, in others the trend has changed. The complexity of the NW subject has required authorities with skilled components and with the independence from all the stakeholders as main feature. A NSA must analyse the risks and the benefits in the management of NW, find a safe site where to allocate the storage and disposal

[13]Jurgen Grunwald, Peaceful uses of nuclear energy under EURATOM law In Jonathan L. Black- Branch and Dieter Fleck (eds), Nuclear non-proliferation in International law Volume III Legal Aspects of the Use of Nuclear Energy for Peaceful Purposes (Springer 2016) 171-213.

facilities trying to avoid any kind of radioactivity spill or damages to the environment and the public[14]. A constant supervision over the construction of the plant is required checking out the respect of all the international recommendations. The supervision lasts until the end of the decommissioning operations with the aim to control the quality of the performances of the plant[15]. The decommissioning operations and the management of the spent fuel are the most challenging tasks for a NSA because these are activities strictly linked with the concepts of environmental protection, safety and sustainable development. In addition, they exercise public enforcement powers such as inspections, sanctions and they have the duty to communicate in a transparent and accountable manner clear information to the public. Their traditional role and functions have changed since the steady absence of binding supranational provisions upon States and the consequent wide discretion arisen. The objectives of NSA have evolved from a regulation aimed to preserve public health from radiation to the task of implementor of international guidelines[16]. With a too formal Joint Convention and an ineffective Euratom treaty, MSs started to opt for this independent model of regulator to guarantee the respect of all the NW standards[17]. Since this tendency has evolved, NSAs have been able to implement the Euratom and IAEA non-binding guidelines. Moreover, they were able to create new standards and practices in the NW field. This evolution must not be interpreted as a replacement of the legislative activity. The regulatory body in its day by day tasks

[14] Ralph Way, Creating a National Nuclear Regulatory Authority, In Nuclear Power and Energy Security (Springer 2009) 9-12.
[15] Ibid
[16] OECD Nuclear Energy Agency, The Regulatory Function and Radioactive Waste Management: International Overview (1st edn, OECD 2005)
[17] OECD Nuclear Energy Agency, The Regulator's Evolving Role and Image in Radioactive Waste Management (2nd edn, OECD 2012).

manages to introduce new best practices filling the regulatory gaps left by Governments and Parliaments. For NW management it has been showed how the NSA, in a compatible manner with the regulatory provisions, starts to work on the licencing process before the selection of the site and facilities allocation[18]. A sensitive approach with the community and with the public has been discovered of relevant importance. The host community which surrounds the potential site must be aware and be involved in all the stages of the process and the possibility to establish a contact with the technical and expert body should reduce the amount of risks and oppositions by the community[19]. This "informal" model has been tested not only towards the public opinion but also with all the stakeholders and it has shown the increase of public confidence over the NW operations and the NSA[20]. Despite this early stage of involvement is not included in the international guidelines, this formal interaction with the players demonstrates how the NSA has become the real implementor of the safety standards: not only accomplishing the duties of safeguarding the environment and public health but also the obligation of providing transparent and accountable information.

3. Nuclear waste management in Italy

The regulation and the multi-level responsibilities of the NW governance are strongly based on the constitutional division of powers. In Italy exists a fragmental division of regulatory competences in which among primary and secondary legislation

[18] Ibid
[19] Ibid
[20] Ibid

adopted by the Parliament and Government's decrees, there are many public authorities involved with the aim to assure the protection of the environment and of the citizens. Italy and its nuclear legacy rely completely on the decommissioning operations of the four NPPs and on the management of the residual SF. After the Chernobyl accident. Italian nuclear phase out started raising the issue of the management of the RW. In the early 90' the state company ENEL which owned the NNPs, selected the abroad reprocessing process for the SF negotiating contracts with the British Nuclear Fuels Ltd and with the French NPP of La Hague[21]. Since that moment Italy has not had a real and effective NW storage and disposal strategy. The amount of waste which has not been shipped to the UK or France has been stored in the original sites in SF pools[22]. Many legislative acts followed one another trying to revitalize Italian RW strategies. Key measure in shaking up the Italian plans was the Decree 31/2010[23] which assigned to the public company SOGIN the obligation to find a new national deposit for the storage of the low-level and intermediate-level waste and for the creation of a technological park where the research for innovative techniques of NW management are studied and developed. In addition, the Decree states that all the operations for the site allocation must be authorize by the Ministry of Environment and Economic Development and that the National map of potentially suitable areas must be revised and approved by ISPRA, the Agency for the environmental protection and research. In fact, in 2014 ISPRA in accordance with the Euratom standards and principles, adopted the Technical Guide N.29 with which established the criteria

[21] Maria Rosaria Di Nucci, Breaking the Stalemate: The challenge of nuclear waste governance in Italy In Nuclear Waste Governance: an International Comparison (Springer 2015) 299-312.
[22] Ibid
[23] Legislative Decree no. 31 of February 15, 2010

that SOGIN had to follow for the suitable repository areas research[24]. In 2015 SOGIN released the list of the potential areas for the examination by ISPRA and by both the Ministries. Further steps will be a public consultation where the potential host communities, municipalities and regions are called to give their opinion and to edit some aspects of the NW deposit plan until the final approval by ISPRA and the Ministries. The NW governance system is highly fragmented between different Institutions and this fragmentation has delayed the SF storage and disposal strategies. The Euratom Directive 70/2011 has forced Italy and all the stakeholders to accelerate the process for the designation of a new repository deposit for the low and intermediate NW still stored in the original sites and for the one coming back from UK and France.

3.1 The National Inspectorate for Nuclear Safety and Radiation Protection (ISIN)

The Euratom Directive 70/2011 imposed to MSs the duty to establish a NSA with the aim to supervise the respect of environmental and safety standards and guarantee security from radiations. Before the Euratom imposition it was the ISPRA to cover most of the functions and tasks in the NW management. But to not be non-compliant, Italy

[24] ISPRA, 'Guida Tecnica N29 Criteri per la localizzazione di un impianto di smaltimento superficiale di rifiuti radioattivi a bassa e media attività' (Isprambiente.gov.it, 2014) <https://www.isprambiente.gov.it/files/nucleare/GuidaTecnica29.pdf> accessed 15 May 2020

with the Legislative Decree 45/2014[25] introduced the ISIN with the aim of carrying out the functions and tasks of a national nuclear authority in accordance with the safety and radiation protection legislation. In particular, this inspection body shall carry out the investigations connected with the authorisation processes; technical assessments, control and surveillance over nuclear installations no longer in operation and over decommissioning activities of research reactors and installations; operations related to the management of RW and of the SF, nuclear material, passive physical protection of nuclear material and nuclear facilities, activities regarding the use of ionising radiation sources and the transport of radioactive materials; finally, the issue of the certifications required by the regulations in force on the transport of radioactive materials[26]. In addition, the Inspectorate will have to issue technical guides and provide support to the competent ministries in the drafting of acts of legislative rank in matters of competence and provide technical support to civil protection authorities in the field of planning and response to nuclear and radiological emergencies[27]. Since ISIN has been instituted, the duty coming from the Euratom Directive 70/2011 of the planification of the NW national deposit has been fulfilled with SOGIN which started the investigative inquiry for the sites[28]. The regulatory work accomplished by the NSA with the cooperation of ISPRA which continues to supervise the aspects of the environmental impact, resulted in a new Italian NW strategy, clear and not confused anymore. The national deposit and the technological park will be built

[25] Legislative Decree No 45 of 4 March 2014 Implementing Directive 2011/70/EURATOM establishing a Community framework for the responsible and safe management of spent nuclear fuel and radioactive waste
[26] Ibid
[27] ISIN, 'Gestione rifiuti radioattivi' (Isinucleare.it, 2020) <https://www.isinucleare.it/it/gestione-rifiuti-radioattivi> accessed 15 May 2020
[28] Maria Rosaria di Nucci (n) 20

and will host the RW. But before that, next step is the public consultation where the community and the local authorities are called to express their opinions. ISIN task will be to strengthen the right and duty to provide transparent information to citizens on the NW plans and on the possibility attributed and recognised to participate to the decision-making process. In my view, this constitutes the greatest challenge for the real relaunch of nuclear policy in the era of the green economy; such a choice needs to be shared with the population involved in nuclear power stations and radioactive sites by guaranteeing citizens the right to environmental information and nuclear participation, with the introduction of instruments and forms of deliberative democracy. As we have already examined, the general trend of NSAs is not only to enforce and implement supranational guidelines but also to introduce best practices targeting the common purpose of safety and environmental protection from RW. NSAs start the interaction with the stakeholders even before the licensing stage in order to provide all the accountable information about risks and benefits. In Italy, as it has been stated by the Constitutional Court in the judgement n.62/2005[29], exists the duty to ensure the environmental participation of the territories concerned in nuclear sites and therefore provide for forms of participation in the procedure for allocation of radioactive material storage sites. The citizens' right to nuclear information is today more than ever an important factor of institutional innovation capable of influencing the governance of public policies in the field of nuclear waste, but it is also the subjective prerequisite for the spread of the culture of nuclear safety at international level. ISIN must be the implementor of the new NWM

[29] Corte costituzionale, 'Sentenza n 62/2005, in tema di evidente mancanza dei presupposti di «casi straordinari necessità e urgenza» e vizio in procedendo della legge di conversione' (Federalismi.it, 2005) <https://www.federalismi.it/nv14/articolo-documento.cfm?artid=4465> accessed 17 May 2020

practices for the Italian purposes. And it must make citizens aware of the benefits of having a facility that, in an environmentally compatible manner, can host nuclear waste, removing it from the risk of unnecessary transport to other countries or to be located in sites that are not technically capable of hosting it.

4. Mineral waste management: the European and Italian scenario

The extractive activity, which has always been a source of raw materials for the society, is also the source of numerous environmental problems. The enormous quantities of mining waste produced during past production activities constitute widespread sources of pollution and of areas of geotechnical and hydrogeological instability, involving problems of various kinds, including: the widespread presence of mining waste with its consequences, abandoned processing facilities and plants that may turn into dangerous areas due to their potential collapse, the numerous subterranean voids that can manifest on the surface problems of sinking sudden soil (sinkholes) or groundwater imbalance with sudden consequences water leaks outside the abandoned tunnels. The European legislation for mining waste is the Directive 2006/21/EC[30] on the management of waste from the European Union which focuses on preventing any adverse effects on the environment, as well as possible risks to human health arising from the management of waste from existing or new extractive industries; on requiring operators to draw up a programme for the management of

[30] Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC [2006] OJ L 102

waste in accordance with the waste hierarchy - prevention, reprocessing, downcycling and disposal[31]; on the duty upon MS to draw up an inventory of mining waste facilities closed and/or abandoned that cause or could cause damage to the environment and to public health[32]. It is useful to remember, in fact, that the lack or bad management of mining waste, deposited and abandoned without any control in areas used for accumulation or storage, has led to situations of risk and environmental emergencies that in the past have caused damage to the environment and loss of human lives. Hence the Directive on waste from the extractive industries lays down measures, procedures, and guidelines to prevent and reduce its effects on human health and the environment. To succeed to its purposes the Directive in its art.6 imposed the establishment of national regulatory authorities with the aim to monitor the institutional framework. Firstly, an effective regulatory target must be the rise of the environmental requirements to all the private companies involved in the MWM. Private companies must be supervised by a public authority in order to make the environmental standards effective for all of them enforcing the polluter pays principles for all the liabilities or non-compliance of the regulatory previsions[33]. The regulation activities and the role of public authorities have been proved again of fundamental importance in the waste management sector. The European Union Institutions have given importance to the role of control and implementation to public regulator in both the nuclear and mining waste field. Consequently, Italy has introduced the MW Directive through the Legislative Decree

[31] Lèbre É and Corder G, 'Integrating Industrial Ecology Thinking into the Management of Mining Waste' (2015) 4 Resources 765 <http://dx.doi.org/10.3390/resources4040765>
[32] The Waste Framework Directive' (2010) 14 E & Central Eur J on Envtl L 101
[33] Ibid

n.117/2008[34]. The decree, extended to mining and quarrying activities, initially raised several concerns mainly related to the different interpretations that could be given to the different aspects dealt with by it. Subsequently, the authorities involved in the application of this new legislation tried to clarify certain points and to find ways of applying them as much homogeneous as possible between the various Italian realities. Art 5. introduces the obligation upon MS to publish a national MW plan with the aim of preventing waste generation with prevention, reuse/ and recovery strategies and ensuring that safety disposal standards are in line with the hierarchy introduced by the European Directive: prevention, recovery and disposal. The responsibility to ensure the safety and the environmental protection during disposal activities relies upon the operator. Therefore the plan must contain the minimum elements that coincide with the waste characterisation, the description of the operations, the structural characteristics of the repository, the procedures of control and monitoring, the closure and post-closure management plan, the measures for prevent deterioration of the state of air, water and soil[35]. The Decree is therefore a system of rules for the management of waste produced by the extractive industries that aims to reduce negative impacts on the environment and human health, paying attention to safety aspects and the system of controls.

4.1 Does Italy need a mineral waste regulator?

[34] Legislative Decree no. 117 of May 30, 2008
[35] Ibid

ISPRA involvement in the waste management has been already addressed. It has been the main regulatory authority for the waste governance, especially nuclear and its role has been raising since no other Institutions were in force. Since the EU has strongly required the creation of independent and highly skilled regulator for the implementation of supranational guideline, in Italy this is not happened. If for the nuclear sector it has been shown how the Euratom Directive has forced Italy to establish a NSA after many years of delay, the Directive 21/2006 has not produced the same effect. Italy lacks a specific MW authority and ISPRA does not represent the national regulator imposed by Europe. ISPRA is an entity called for environmental research where the term research has been widely interpreted with protection and implementation. But ISPRA's competences and features do not fit to the complex activities which MW governance requires. With many accidents Italy had to deal with and with current extractive projects which are taking place (especially in the Sardinia region), the need for a competent authority is indispensable. Until now MW competences are split between ISPRA and the regional environmental departments even if their role is only to focus on the release of licences. Hence A MW authority is needed to guarantee the respect of the MW hierarchy, of the prevention approach and recycling practices; to accomplish the European obligation of becoming self-independent from a MW disposal infrastructures perspective stimulating the legislative Institutions to develop an effective plan for the construction of facilities closed to the waste accumulation; to incentive the development and innovation of techniques for minimizing environmental impact and pollution prevention; to implement the polluter pays principles and the precautionary principle for the protection of citizens health[36]. These

[36] Directive 21/2006/EC n (29)

are all the functions and competences that the European Union asks to the national regulator. Italy is delaying the respect of the Directive. The absence of a specific regulatory body has shown the delay of the legislative Institutions to take measures for the development of the MW strategies. Proof of the inefficacy of ISPRA is the absence of legislative provisions since the Decree 117/2008 and therefore, of a national plan for MW disposal sites. If the NWM has been finally empowered with a NSA which has shown the ability to boost the Italian NW policy achieving the short-terms objectives and working on the long-term ones, the MW sector is deprived of a regulatory guide who can succeed in the European targets.

5. Conclusions

This paper aimed to examine the role of national regulator in the NWM and MWM. The focus has been the Italian scenario and therefore the European one to which all MSs are related and bound. For NWM the Euratom treaty provides a formal framework without any binding obligations and duties upon MS. This scenario has improved the capacity of States to freely interpret the NWM rules jeopardizing the original target of a unique and common nuclear market and frame. On the other side the Euratom treaty has forced MS to progress in the regulatory activities through NSAs which have been found effective in the implementation of environmental and safety standards and in the creation of new best practices. Despite the delay in the establishment of the NSA, Italy is succeeding in accomplish its NW disposal activities with the planification of a national deposit and a technological park for hosting NW. And the NSA, ISIN, has proven to foster Italian nuclear policy achieving the

short-terms plan creating a system of cooperation with the other stakeholders. Next goal will be the interaction with the potential host community of the disposal site to demonstrate the benefits of this infrastructure for the safety of the environment and citizens. Before the incoming public consultation, this represents the most important challenge for the Italian NSA. The European strategy of providing an effective regulatory framework monitored by independent and specific national authorities has been fulfilled in the MWM sector too. The difference is that if Italy has been able to transpose the NW Directive requiring a NSA, it has proven to be late in complying with the MW Directive asking for the same entity to ensure the respect of the supranational standards. This does not mean that the MW sector is not supervised by a national authority but it means that ISPRA, environmental research authority, as it was originally designed, it does not have the competences and features to face the regulatory challenges of this sector. Indisputable proof has been found the delay of the Italian authorities to publish a national plan for the MWM, for the strategies and the sites allocation. The role of a public regulator is not only to control and monitor a sector, but it is also to implement the supranational provisions filling the legislative gaps left by the legislative authorities and stimulating the achievement of several targets. Nowadays waste governance is the main challenge in the energy sector. Radioactive waste, pollution of areas and risks for humans need to be effectively addressed as regulatory concerns. MS must understand that in order to benefit from the energy generation and distribution a clear strategy for waste governance must be developed. The institutional framework needs to be regulated through the activities of national regulators. Their role in the constitutional framework has been shown to be of fundamental importance not only in advising Governments but also to control them for the respecting of multi-level rules. And in the energy sector national regulators are

set with the aim of safeguarding the environment and the public health. Now MS must understand that the duty to establish public independent regulators is not attempting to their functions and competences but instead it is providing a further instrument to make the energy sector safe, environmentally sustainable, and widely accepted.

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