The current EIAR has been revised and supplemented in accordance with the requirements of MEW indicated in letter **OBOC-277/18.05.2013.**

The supplements have been made in the corresponding EIAR chapters, and the description of the supplements has been systemized and indicated in Item 7.2.1 of the present EIAR. To facilitate the review the supplemented information has been systemized in Attachment 19.

Environmental Impact Assessment Report for the Facility for Treatment and Conditioning of Radioactive Waste with a High Volume Reduction Factor at Kozloduy Nuclear Power Plant

CHAPTER A

INTRODUCTION

CONTENTS

A. INTRODUCTION 1

A. INTRODUCTION

The Environmental Impact Assessment Report (EIAR) for the Investment Proposal (IP) "Facility for plasma melting, treatment and conditioning of radioactive waste with a high volume reduction factor at Kozloduy NPP", foreseen by the Investor to be implemented on its own territory is developed, based on art. 4 of the EIA Ordinance, under the provisions of art. 96 (1) of the Environmental Protection Act (EPA), promulgated State Gazette (SG) 91/25.09.2002; amended SG 98/18.10.2002, amend. 86/30.09.2003, amend. SG53/13.07.2012, in force from 13.07.2012, last amended SG 82/26.10.2012, in force since 26.11.2012, in force from 26.11.2012 and as per art. 12 of the Ordinance on the terms and procedure for performing environmental impact assessment (EIA Ordinance), prom. SG 25/18.03.2003, amended SG 3/10.01.2006, amended SG 80/9.10.2009, amended. SG 29/16.04.2010, amended SG 3/11.01.2011, last amended SG 94/30.11.2012, and is initiated on the base of the Decision No. 26-PR/2010 of the Minister of MEW (letter Ref. No. 26-00-939/20.07.2010) concerning the statement on the Notification for evaluation of the need of an EIA, including the instructions concerning the requirements of EPA chapter 6, further on the provisions of art. 31 of the Biodiversity Act and according to the MEW Guidance for completion of EIAR for the IP.

The EIAR is also compliant with the current provisions of the other legislative acts and regulations related to the environmental protection in the Republic of Bulgaria.

The contents of the present EIAR has been supplemented in accordance with MEW letter OBOC-277/13.12.2012 for EIA quality assessment. A copy of the letter is presented in chapter 11, Attachment 6.

The development of the EIA Report has been assigned to a team of independent experts, possessing the necessary competencies according to the Bulgarian regulations, based on a contract signed between the Employer and the consortium between EWN – Germany and Energy Institute JSC – Bulgaria. ***Attachment 1*** of the report includes the List of the experts and the team leader under EPA art. 83 (2) and (4), authors of the present EIAR. ***Attachment 2*** includes copies of the master degree diplomas as well as other qualification documents for all EIA experts, and ***Attachment 3*** includes the written statements as per art.11 (3) of the EIA Ordinance by each of the experts and by the team leader.

In a letter with Ref. No. 26-00-3177/12.03.2012 (see ***Attachment 4***) Decision 26 - PR/2010 was received, by which MEW has ruled that the Employer should continue the procedure by performing an environment impact assessment (EIA) and to develop a Compatibility Assessment Report (CAR), structured according to art. 23 (2) of the CAR Ordinance, which will be an integral part of the EIAR. In a letter with Ref. No. 26-00-2007/31.07.2012 a MEW decision was received stating that the supplemented ToR for the scope of the EIA for IP for construction of a "Facility for treatment and conditioning of radioactive waste with a high volume reduction factor at Kozloduy NPP" complies with the identified issues presented by the Romanian Ministry of Environment and Forests. Besides that, MEW rules that the EIAR development should start by a team of experts with a team leader, all possessing an educational and qualification degree "**Master**" and complying with the requirements of EPA art. 83.

The EIAR development should comply with the ToR under art. 10 (3) of the EIA Ordinance and with the requirements of art. 96 (1) of EPA, regarding the procedure of the EIA for IP.

The Terms of Reference (ToR) on the scope and content of the EIA, upon receipt of the relevant letter by the competent authority – MEW on the ToR consultations, was submitted for receiving of opinions by the stakeholders - institutions and organizations, with letters, copies of which are included in ***Attachment 5.***

Following the requirements of art. 4 of the EIA Ordinance, the required documentation regarding the initial Notification for the IP was submitted to MEW. Notification letters were sent to the Competent Authorities (CA) and to the Mayor of Kozloduy Municipality (letter Ref. No. 717/13.06.2005) and through him the information was submitted to the concerned public in the Information center of the Municipality.

The municipal administration has stated that, due to the anticipated impacts on the population and the environment, the development of an EIAR is necessary.

The ToR on the scope and content of the EIAR has been developed based on the MEW answering letter (MEW Letter ref. No 26-00-3177/19.10.2011 and MEW Letter ref. No 26-00-3177/12.03.2012) on the applicable procedures in compliance with the provisions of Chapter 6, Section III, art. 4a of the EIA Ordinance (adopted with CMD 59/2003, amended SG 3/2011, last amended SG 94/30.11.2012), art. 31 of the Biodiversity Act, and Chapter 7, Section II of EPA (prom. SG 91/2002, with amendments), as well as according to the provisions of art. 10 (3) of the EIA Ordinance.

Copies of the received written statements on the ToR are included in ***Attachment 6***.

At this stage the MH statement on the EIAR ToR text has been received, which has not been approved by MEW. A MEW statement on the ToR Revision 6 has also been received, which approves the ToR.

As stated by the competent authority, since the proposed activity relates to item 3 from Annex Nr. 1 to the Convention on EIA in transboundary context, the Employer has prepared and submitted to MEW information (in English language) in the format adopted with Decision I/4 at the First Meeting of the Parties to the Convention on EIA in transboundary context. In this case, the Romanian party has declared its consent to participate in the EIA procedure. In addition to the results from all consultations carried out in the Republic of Bulgaria, their statement has also been taken into account in the course of the EIA procedure. The exchange of information on the procedure in transboundary context is given in ***Attachment 7***.

The received answers with comments and recommendations are taken into account during the elaboration of the EIAR; summary of the comments and the reasons for the accepted and unaccepted ones are included in Chapter 7 of the present EIAR.

Information on the Proponent (Employer) of the Investment Proposal

Proponent (Employer):	Kozloduy NPP Plc Reg. in Vratza Regional Court under number 582/2000, v.1, pg. 38 UIC: 106513772
Business address:	Kozloduy town Bulgaria
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Background for the EIAR Elaboration

No	Denomination	Author	Year
1.	Technical Proposal for the Supply of a Facility for Treatment and Conditioning of Solid Radioactive Waste with a High Volume Reduction Factor **KPMU/RWT/005_6_BG**	C. Lillis Project Manager	02.2008
2.	Information for evaluation of the need for EIA of a Facility for plasma melting, treatment and conditioning of radioactive waste at KNPP **KPMU/IEA/001_0**	Ts. Ignatova Environmental Expert St. Velikov S/L/E expert	04.2009
3.	Terms of Reference for the EIA for the Facility for Treatment and Conditioning of Solid Radioactive Waste with a High Volume Reduction Factor at Kozloduy NPP **KPMU/IEA/012_7_BG**	J.F. Nicaise as Project Manager	31.10.2012
4.	Intermediate Safety Analysis Report of PMF, **I-650-RP-0012**,	IBERDROLA	2011
5.	PMF Decommissioning Concept, **I-650-PL-0222**,	IBERDROLA	2011
6.	Principles of RAW management, Safety Standard No 111-F	IAEA, Vienna	1995
7.	Strategy for management of SNF and RAW, Council of Ministers Decision, 5 January 2011.	Ministry of economy, energy and tourism	2011

No	Denomination	Author	Year
8.	The ZWILAG Plasma Facility: Five Years of Successful Operation, W. Heep	ASME 2010 13th International Conference on Environmental Remediation and Radioactive Waste Management, Volume 1	2010
9.	IAEA Safety Series No. 108, Design and Operation of Radioactive Waste Incineration Facilities	IAEA, Vienna	1992
10.	IAEA Safety Standard - Predisposal Management of Low and Intermediate Level Radioactive Waste	IAEA, Vienna	2003
11.	IAEA TECDOC-1492 Improvements of radioactive waste management at WWER Nuclear Power Plants	IAEA, Vienna	2006
12.	IAEA TECDOC-1527 Application of thermal technologies for processing of radioactive waste	IAEA, Vienna	2006
13.	BREF Waste Incineration, BREF Waste Treatment	European Commission	2006
14.	Best Available Techniques (BAT) for the Management of the Generation and Disposal of Radioactive Wastes, A Nuclear Industry Code of Practice	Nuclear Industry Safety Directors' Forum Disclaimer	December, 2010
15.	Radiation monitoring program during KNPP operation	Kozloduy NPP	2010

Detailed information on the used reference sources and regulations is given in Chapter 5 and in Chapter 11, section 11.2.

Brief presentation of the Proponent's program

Kozloduy NPP is the only nuclear power plant in Bulgaria and is the biggest electricity producer in the country, accountable for more than one third of the annual national electricity production. This is the reason for the crucial importance of the plant as a factor of economic stability in the country and in the region. Kozloduy NPP produces the cheapest energy in the country, thus ensuring acceptable electricity prices for the end consumers in Bulgaria.

The safety of Kozloduy NPP is the main priority and is subject to independent state control performed by the Bulgarian Nuclear Regulatory Agency (BNRA) at the Council of Ministers. Following the checks performed during the recent years by IAEA, the World Association of Nuclear Operators (WANO), the EC Nuclear issues workgroup and others, the safety of Kozloduy NPP was highly appreciated and internationally recognized.

The production activity of Kozloduy NPP is fully in line with the World Nuclear Association idea of a "nuclear Renaissance". The plant complies with the strict ecological requirements of the Kyoto Protocol, since it does not emit any greenhouse gases in the atmosphere.

Six power Units of Russian design have been built on Kozloduy NPP site with a total electrical power of 3760MW, equipped with pressurized water reactors. In fulfillment of the commitments of Bulgaria related to the accession to the European Union, Kozloduy NPP terminated the operation of the first four power Units before expiry of their design lifetime.

In 2004 Kozloduy NPP became the first commercial participant on the liberalized market of electrical power in Bulgaria.

The two WWER-1000 Units have been in operation since the beginning of 2007 and the plant`s annual share of the electricity production is 34 %.

Realizing its responsibility to the ecological environment now and in the future, the plant adheres to all safety standards regarding the management of radioactive waste and spent nuclear fuel. It is stored in special spent fuel storage ponds and in the spent nuclear fuel storage facility built on the plant site. A facility for processing, conditioning and storage of low and intermediate level radioactive waste operates within Kozloduy NPP site.

The preservation of the environment is an element of great importance in the plant policy. The plant has an automated information system for measuring the gamma-background in a 3 km radius around the site. Due to the high safety standards, the gamma- background around the plant does not exceed the natural background levels before the construction of the plant. About 4200 people work at the plant, which makes it one of the biggest employers in the country. Kozloduy NPP has always provided a high living standard for its employees. The plant is a joint-stock company with 100 % state participation. Since 18.09.2008 Kozloduy NPP is a subsidiary of "Bulgarian Energy Holding" JSC. Kozloduy NPP is managed by a Board of Directors and an Executive Director.

Licensing system

Kozloduy NPP operation is subject to state supervision by the Bulgarian nuclear regulatory agency (BNRA) at the Council of Ministers, the Ministry of Environment and Waters and the Ministry of Health.

The nuclear facilities at the nuclear power plant are operated in compliance with the terms of the operation licenses issued by BNRA.

Following the Council of Ministers Decision to declare Units 1 and 2 facilities for management of radioactive waste (RAW), on 18.10.2010 BNRA terminated the operation licenses for Units 1 and 2 of Kozloduy NPP. Licenses for the two Units as facilities for RAW management subject to decommissioning are issued to the State Enterprise "Radioactive Waste".

CMD No 1038/19.12.2012 declares KNPP Units 3 and 4 a RAW management facility, subject to decommissioning. Their property is transferred to SE RAW for administration and management.

Currently Units 3 and 4 have licenses issued by the BNRA as RAW management facilities subject to decommissioning; these licenses are issued to SE RAW.

Currently the SNF from Units 1-4 has been removed from the Units and is placed at the SNF Storage Facility.

The necessary permissions from BNRA for modifications in constructions, systems and equipment (implementation of technical solutions) and in the internal rules for performance of important activities related to the safety of the nuclear facilities at Kozloduy NPP site, have been duly issued.

Background, purpose and justification of the EIA development. Methodology

In November 1999 the Bulgarian Government and the European Commission signed an agreement, according to which the Bulgarian Government committed to shut down and decommission Units 1-4 of Kozloduy Nuclear Power Plant (KNPP) at the earliest possible date, beginning with the closure of Units 1 and 2 until the end of 2002. A commitment for closure of Units 3 and 4 until the end of 2006 was undertaken at a later date. Consequently, all four units were shut down at the agreed time.

Taking into account the financial consequences of early closures of Units 1-4, the European Commission has offered a multi-annual assistance package for Bulgaria's energy sector. As a result, the Kozloduy International Decommissioning Support Fund (KIDSF) was established in June 2001.

In the Frame Agreements between the Republic of Bulgaria and the European Bank for Reconstruction and Development on the activities under the Kozloduy International Decommissioning Support Fund RAW management projects are included. Decision was taken for the construction of a Plasma Melting Facility (PMF) on the KNPP site. The purpose of the PMF is to enable the volume size reduction of Category 2a radioactive waste, currently stored in various locations on the Kozloduy Nuclear Power Plant (KNPP) site.

On the basis of the Decision No 26 –PR/2010 by the Ministry of Environment and Waters on evaluation of the need to perform an environmental impact assessment an EIA procedure according to the Environmental Protection Act and other acts and regulations mentioned in the decision above has to be implemented.

For this reason a further KIDSF project, the Project P5c - an Environmental Impact Assessment Report (EIAR) for the construction, operation and decommissioning of the aforementioned PMF, has to be elaborated. This EIA Report is the basis for the EIA procedure executed by MEW.

The purpose of the IP EIA is to determine, describe, analyze and assess the direct and indirect IP impacts on the population and the components of the environment, including the biological diversity and its components, soil, water, air, atmosphere, landscape, earth bowels, natural objects, mineral diversity and the interaction between them.

The present EIAR comprises all phases of the IP implementation - construction, operation, closure and land reclamation. The “zero alternative”, along with alternative technological options, including in accordance with the best available techniques, as well as location alternatives have been considered. Recommendations and measures

have been proposed to reduce the impact and solve possible environmental problems in the implementation of the IP and its closure, ensuring protection of human health, the environment and the sustainable development of the municipality.

Executive summary of the EIAR

The impacts on the components of the environment are assessed in Chapter 4, based on the description of the PMF in Chapter 1 and the description of the present state of the environment in Chapter 3.

In Chapter 2 the alternatives of location and technologies proposed by the Proponent (Employer) and the justification of the choice made are discussed. The proposed technology to use a PMF is also justified on the basis of the BAT evaluation.

The methods used by the experts related to the specific fields are described in Chapter 5.

The results of the expert evaluation of the IP lead to proposing measures to reduce, prevent or terminate significant adverse impacts on the environment, recommendations to the site monitoring plan and the emergency plan (Chapter 6).

Chapter 7 summarizes the standpoints and opinions expressed by the concerned stakeholders, i.e. population and institutions, who have participated in the consultations on the scope and content of the EIA Report, including the supplements regarding the EIAR quality assessment (MEW Letter – Ref. OVOC-277/13.12.2012 and MEW Letter – Ref. OVOS 277/28.05.2013), presented in Appendix 19.

The experts' conclusion on the environmental impact assessment of the project implementation, operation and decommissioning is presented in Chapter 8.