Attachment 1_Answers to additional comments and requests submmitted in the corresponding letter of The Ministry of Environment, Water and Forests of Romania Reg. No DGEICPSC/37558/12.11.2024. issued on November 12th, 2024 (hereinafter: Letter).

<u>Page 2, paragraph 8 (further referred as comment 1)</u>: PM10 concentration values: first maximum for an average period of a day in the current situation is greater than first maximum for the future situation involving the non-hazardous (solidified nonreactive) landfill and other three dust emission points (boiler plant emitter, emitter of the solidification filter system and emitter of the waste pretreatment filtration system and carbon filters active) including a significant extension of the phosphogypsum deposit. In this case we believe it is necessary to offer additional explanations.

Answer: Indeed, the modelled phenomenon is specific in nature, thereby in the completed studies it has been elaborated on. Particularly, an explanation has been provided on page 53 of the "*Plant for energy utilization of waste and landfill of non-hazardous waste impact on air quality of the wider location of the chemical industry complex in Prahovo*" study provided as an EIA supplement issued in April 2024 by Faculty of Mechanical Engineering of the University of Belgrade. The direct quote is given in the following paragraph: "Considering that the first maximum for the averaging period of one day for the current situation is higher than the first maximum for the future situation involving the landfill of non-hazardous waste (non-reactive solidificate) and an additional three point sources of dust emissions (boiler plant source, source of the filter system of solidification and source of the filter system of pre-treatment of waste and activated carbon filters) as well as a significant expansion of the phosphogypsum storage, it is necessary to provide additional explanation. In this case, the dominant source of powdery matter is the phosphogypsum storage for both the current and future state. The characteristics of area sources that are important from the aspect of dispersion are primarily the value of emissions from them, then their height and, of course, their total surface area. Currently, the phosphogypsum storage consists of 5 units (~39.2 ha), as shown in Figure 2.11 and in Appendix I of this Study, the average height of the three northern units of the landfill is 7.5 m, while the average height of the southern zone is 3 m, and the eastern zone is at the level of 0 m. The adopted efficiency of applied PM mitigation measures, based on wetting, is 75%. The future state implies the formation of a new phosphogypsum storage zone east of the existing ones (~53.1 ha), but also an increase in the efficiency of applied PM mitigation measures to 90%, while the mean height of all landfill zones will be 7.5 m. It is precisely the higher efficiency of applied PM mitigation measures and the higher mean height that led to the fact that the ground concentrations are lower in the event of a future condition, despite the increase in the area of the warehouse. Due to its characteristics (as given in point 2.6 of this Study), as well as the position within the complex itself, the load of the solidification landfill, as an area source of particulate matter emissions, is very low, i.e. practically negligible.".

The authors would like to further clarify that subject supplement study incorporating air emission impact modelling was done comprehensively, including not only the existing emitters on the location and new emitters linked to the subject project, but also the potential impact of the future phosphogypsum storage facility extension project envisaged in the long-term plans of the industrial complex Prahovo.
The modelling was done in this way in order to comprehensively consider all potential cumulative impacts and to obtain adequate inputs for relevant future projects that are planned by the Elixir Group member companies at the location. Please note that the future expansion of the phosphogypsum storage facility is included in the subject modelling scope based on the area planning documents and the preliminary conceptual design for the phosphogypsum storage *expansion, still not based on the completed project design and documentation.* Thereby, the future expansion of the phosphogypsum storage facility will be the subject of a separate future project and accordingly a separate future cross-border consultations process in the coming years. Elixir Prahovo, as the operator of the existing storage facility and the investor of its future expansion, will pay special attention to developing measures to mitigate dust emissions within basic engineering and EIA study completion taking into consideration inputs obtained from the subject comprehensive study as well as your valuable input received during this consultation process.

<u>Page 3 paragraph 7 (further referred as comment 2)</u>: In order to reduce the loss of polluting substances in the watercourse, it is necessary to monitor with increased frequency the discharge points in the Danube River, in order to reach the quality standards.

Answer: The authors agree, in EIA subchapter 9.2.1.3 Wastewater Quality Monitoring the required monitoring plan is presented with full compliance with the applicable laws and by-laws of Republic of Serbia as well as Commission implementing decision (EU) 2019/2010 of 12th November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration (notified under document C(2019) 7987). In page 603 it is particularly outlined "In accordance with the characteristics of wastewater generated and discharged into the recipient, it is the obligation of the Project Holder to perform regular monitoring of wastewater quality:

- after treatment at the boiler wastewater treatment plant: total suspended solids (TSS), total organic carbon (TOC), metals and metalloids (As, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Tl, Zn, Mo), ammonium-nitrogen (NH4-N), sulfates (SO42-) and PCDD/ F, chlorides;
- before and after treatment on the grease and oil separator: temperature, pH value, biochemical oxygen demand (BOD5), chemical oxygen demand (COD), hydrocarbon index."

In subsection 9.2.1.3.1 Monitoring of wastewater from the boiler plant it is specified that for the potentially most polluted wastewater stream, boiler generated technology specific wastewater, the operating procedure will be as specified by the quote (page 603): "In order to facilitate manipulation and possible response in the event that the water quality does not

correspond to the required quality for discharge into the recipient, chamber 2 is divided into 4 identical parts (subchambers 2a, 2b, 2c, 2d). The volume of each part, i.e. each subchamber, is 80 m^3, which is enough for each subchamber to accept wastewater for a period of 8 hours. After that, the wastewater from the sub-chamber in question is sampled and the quality parameters are tested. In this way, it is possible for each batch of 80 m^3 to be analysed before discharge. By dividing chamber 2 into smaller segments, a semi-batch method of wastewater treatment management is enabled, in order to have time to perform complete physico-chemical analyses. The maximum duration of the analysis is 8 hours, and then the water can be discharged in an appropriate manner, depending on the analysis results. If the analyses show that the waters have a satisfactory quality for discharge into the final recipient, they are gravitationally discharged first into subchamber 2e, which is intended to function as a common channel, i.e. the wastewater pool purified water collector U-C06. From subchamber 2e, the treated water is gravitationally transported to the manhole (pumping station) for pumping the treated water to the Central collector of clean water of the industrial complex Elixir Prahovo, which flows into the natural recipient – the Danube River.". Thereby, the foreseen operation practice allows for verification of 100% boiler plant wastewater compliance before release to the receiving waterbody. In case of non-compliance, the wastewater stream will be treated again on a boiler wastewater treatment plant or depending on demonstrated contamination thermally treated on the boiler itself. Adopted measures confirm redundancy in operations with an ultimate goal of non-jeopardizing the receiving waterbody, River Danube.

The subchapter moreover specifies: "Regulation on technical and technological conditions for the design, construction, equipping and operation of plants and types of waste for waste thermal treatment, emission limit values and their monitoring ("Official Gazette of the RS", No. 103/2023), the following measurements are performed at the wastewater discharge point:

1) continuous measurement of the parameters referred to in the aforementioned Annex 4 of the Regulation;

2) individual daily measurement of total suspended solids;

3) monthly measurement also on a representative sample of discharged waters during 24 hours, i.e., pollutants in connection with Annex 4 of the Regulation;

4) measurements of dioxins and furans every six months (in the first year of operation, it is recommended to measure at least four times a year with an interval of three months).

Table 9.6 gives the emission limit values for pollutants at discharging wastewater from the waste gas treatment system of the thermal treatment plant.

Table 9.6 Emission limit values for pollutants at discharging of wastewater from the waste gas treatment system of the thermal treatment plant.

Parameter name		**Process**	**Unit**	**BAT-AELs BREF WI[80]**	**ELV in accordance with the regulations of RS[81]**	**Test method according to BAT-AELs in accordance with BREF WI**	**Minimum monitoring requirement**
Total suspended solids (TSS)		FGC Treatment of bottom ash	mg/l	10-30	30 (in 95% measured values) 45 (in 100% measured values)	EN 872	Once a day (2) Once a month (1)
Total organic carbon (TOC)		FGC Treatment of bottom ash		15 – 40	-	EN 1484	Once a month (1)
Metals and metalloids	As	FGC		0.01-0.05	0.15	Different EN standards (e.g. EN ISO 11885, EN ISO 15586 or EN ISO 17294-2)	Once per month
	Cd	FGC		0.005-0.03	0.05		Once per month
	Cr	FGC		0.01-0.1	0.5		Once per month
	Cu	FGC		0.03-0.15	0.5		Once per month
	Mo	FGC		--	-		

Metals and metalloids	Hg	FGC		0.001-0.01	0.03	Different EN standards (e.g. EN ISO 12846 or EN ISO 17852)	Once per month
	Ni	FGC		0.03-0.15	0.5	Different EN standards (e.g. EN ISO 11885, EN ISO 15586 or EN ISO 17294-2)	Once per month
	Pb	FGC Treatment of bottom		0.02-0.06	0.2		Once per month
	Sb	FGC Treatment of bottom		0.02-0.9	-		Once per month
	Tl	FGC		0.005-0.03	0.05		Once per month
	Zn	FGC		0.01-0.5	1.5		Once per month
PCDD/F		FGC	ng I-TEQ /l	0.01-0.05	0.3	No EN standard	Once every 6 months

(1) Monitoring may also be performed once every 6 months if it is proven that emissions are relatively stable.

(2) Daily 24-hour flow-proportional sampling may be replaced by daily measurements.

[80] Commission implementing decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration (notified under document C(2019) 7987)
[81] Regulation on technical and technological conditions for the design, construction, equipping and operation of plants and types of waste for waste thermal treatment, emission limit values and their monitoring ("Official Gazette of the RS", no. 103 of 21 November 2023).".

Similarly, all the requirement with corresponding measurement frequencies is specified for atmospheric wastewater and wastewater after biological treatment in subchapters 9.2.1.3.2 and 9.2.1.3.3, respectively.

The quality of the receiving body is regularly monitored as expressed in subsection 9.2.1.4 Surface Water Quality Monitoring, considering that Danube is international river, on 29th of June 1994 the Convention on Cooperation for the Protection and Sustainable Use of the Danube River was signed in Sofia (Bulgaria), which entered into force in October 1998 when it was ratified by the ninth signatory. Serbia became a contracting party by adopting the Law on Ratification of the Convention on Cooperation for the Protection and Sustainable Use of the Danube River ("Official Gazette of FRY - International Treaties", no. 2/2003). The direct quote from the subsection (page 610) specifies: "In order to obtain a more complete view of the state of surface water quality at the subject location as well as an adequate assessment of the impact of the existing ELIXIR PRAHOVO complex on the water quality of the Danube River, the operator of the chemical complex conducts regular monitoring of wastewater and surface water quality in the subject area. Testing of wastewater from the ELIXIR PRAHOVO complex and surface waters of the Danube River is carried out quarterly on an annual basis, by sampling and physical and chemical testing of water quality by the Institute for Prevention, Occupational Safety, Fire Protection and Development LTD. Novi Sad, Branch "27. January" Niš at four measuring points as shown in Table 9.10.

Table 9.10 Sampling points for wastewater of the ELIXIR PRAHOVO complex and surface waters (Danube River).

Measuring point	**Wastewater**	**Sampling point**	**Coordinates**	
			N	**E**
OV1	Wastewater before treatment system	Sampling point manhole located at the entrance to the neutralization pit	44°17'06,89''	22°36'35.39''
OV2	Wastewater after treatment system	Sampling point manhole located in auxiliary facility at the outlet of wastewater from the plant	44°17'07,78''	22°36'37.93''
PV1	Danube River 150 m upstream of the inlet of collective wastewater	The sampling point is located on the bank of the Danube River, 150 m upstream of the wastewater outflow	44°17'27.50''	22°36'58.08''

PV2	Danube River 100 m downstream of the inlet of collecting wastewater	The sampling point is located on the bank of the Danube River, 100 m downstream of the wastewater outflow	44°17'21.08''	22°37'25.39''

The results of wastewater testing after treatment system facility from the Elixir Prahovo complex show that the concentrations of the tested parameters comply with the emission limit values prescribed by the Regulation on Limit Values of Pollutant Emissions into Water and Deadlines for Reaching Them ("Official Gazette of the RS", No. 67/2011, 48/2012 and 1/2016, Appendix 2, Other wastewaters, 4. Limit values for emissions of wastewater containing mineral oils and with emission limit values prescribed by Commission implementing decision EU 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliaments and the Council for waste incineration (notified under documents C(2019)7987, tables 5.9 and 5.10.").

Later in the text on page 611 it is specified "Bearing in mind that all wastewater, which meets the prescribed ELV, from the subject Waste-to-Energy Plant will be collectively discharged into the existing Central collector of clean water of the Elixir Prahovo industrial complex, which is discharged into the natural recipient – the Danube River, it is the obligation of the Project Holder to perform regular quarterly monitoring of the surface water quality of the Danube River upstream and downstream of the inflow of wastewater from the Central collector of clean water of the Elixir Prahovo industrial complex after the implementation of the project in question.".

<u>Page 3 paragraph 8 (further referred as comment 3)</u>: Upon commissioning, in order to identify priority substances/priority hazardous substances, the project developer has to carry out a qualitative screening at the first discharge of the treated water into the receptor. For those substances identified in quantifiable concentrations, further monitoring is required, both in the treated discharged wastewater and in the receiving surface water body.

Answer: The EIA authors and project developers are in full agreement with the constatation. Information is provided in the answers given above. As described, there are already performed zero measurements, moreover it is envisioned that the quality of the wastewater will be constantly verified, while additionally performing quarterly measurement of surface water quality (read River Danube).

<u>Page 3 paragraph 9 (further referred as comment 4)</u>: Depending on the type of waste deposited on the platform, it is necessary to renew the qualitative screening for the priority substances/priority hazardous substances in order to expand the spectrum of substances/groups of substances analyzed.

Answer: Due to selected incineration combustion technology, i.e., maximal combustion temperature, the investor imposed a strict restriction on the composition of waste intended for treatment. In subsection 4.10 Pollution control it is stated "During the operation, strict care must be taken of the waste received at the plant in accordance with a clearly defined list of waste that may/may not be accepted and treated in the plant in question. The project documentation provides all restrictions and prohibitions related to certain characteristics of waste that must not be treated. It is strictly forbidden to accept waste that is explosive, flammable, infectious, radioactive, waste materials containing or are contaminated with polychlorinated biphenyls (PCBs) and/or polybrominated triphenyls (PCTs) and/or polybrominated biphenyls (PBB), waste containing cyanides, isocyanates, thiocyanates, asbestos, peroxides, biocides, cytostatic, electronic waste. Additional restrictions on reception to the plant in question are waste substances in the form of aerosols, as well as organometallic compounds (spent metal-based catalysts, or organometallic wood preservatives) and aluminized paints. The subject project does not envisage waste thermal treatment containing POPs substances. The final list of waste that can be treated at the Waste to Energy Plant complex is given in the appendix of this Study.". Moreover, in subsection 7.1.2.1 it is expressed: "The project documentation defines that waste containing more than 1% of halogen organic substances expressed as chlorine cannot be treated in the boiler.". These restrictions will be strictly implemented by execution of pre-acceptance and acceptance procedures in accordance with BATc9 & BATc11 of Commission implementing decision (EU) 2019/2010 of 12th November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration (notified under document C(2019) 7987). Avoiding treatment of POPs assures that waste induced contamination of the site is circumvented, making screening of the location for such substances redundant. On the other hand, prevention of treatment for waste types containing POPs and/or halogenated compounds in high concentration prevents the likelihood of formation of compounds categorized as POPs. Please be referred for more information to answers given to comments risen on letter page 4 paragraph 5 (comment 11) and page 4 paragraph 6 (comment 12).

<u>Page 3 paragraph 10 (further referred as comment 5)</u>: Since the site referred to in the environmental impact assessment report is affected by historical pollution (as shown in the document), ecotoxicological determinations are needed to be carried out both before the start of the activity and during the implementation of this project.

Answer: Indeed, the site historical environmental pollution has been addressed in detail in the supporting report Analysis of the environmental factors, March 2023. On the other hand, ecotoxicological deterioration of the potentially impacted area has been determined in other relevant work. Based on the most recent international Danube Survey (Liška et al., 2021), but also earlier surveys (László, 2015; Liska, 2015; Slobodnik and von der Ohe, 2015; Sommerwerk et al., 2009), target stretch (refers to sector below Iron Gate II Dam to the Timok confluence) is not among the sites along the Danube (mentioned studies involve more than 2,500 kilometres of the Danube, from Kelheim in Germany to the Danube Delta – Romania/Ukraine) that are the most critical in respect to presence of toxic and genotoxic agents. This was also confirmed by genotoxic studies (Deutschmann et al., 2016; Marić et al., 2023, 2021). The approach mention in the comment is not directly relevant to the impact assessment of the potential project but could be considered as back up information that would support further monitoring of the influence of operational phase to the aquatic environment. Previous genotoxicological studies provide confident information for further monitoring of substances with known genotoxic potential, and this will be considered in consequent phases of the construction project as beneficial information for the investor.

Reference survey:

Deutschmann, B., Kolarevic, S., Brack, W., Kaisarevic, S., Kostic, J., Kracun-Kolarevic, M., Liska, I., Paunovic, M., Seiler, T.-B., Shao, Y., Sipos, S., Slobodnik, J., Teodorovic, I., Vukovic-Gacic, B., Hollert, H., 2016. Longitudinal profile of the genotoxic potential of the River Danube on erythrocytes of wild common bleak (Alburnus alburnus) assessed using the comet and micronucleus assay. Sci. Total Environ. 573, 1441–1449. https://doi.org/10.1016/j.scitotenv.2016.07.175

László, F., 2015. Pollution by Heavy Metals in the Danube River Basin, in: Liška, I. (Ed.), The Danube River Basin. Springer-Verlag, Heildeberg Berlin, pp. 85–94.

Liska, I., 2015. Managing an International River Basin Towards Water Quality Protection: The Danube Case. Handb. Environ. Chem. https://doi.org/10.1007/698-2015-388

Liška, I., Slobodnik, J., Wagner, F., Deutch, K., Sengl, M., Paunović, M., 2021. JOINT DANUBE SURVEY 4 SCIENTIFIC REPORT: A SHARED ANALYSIS OF THE DANUBE RIVER, 1st ed. ICPDR – International Commission for the Protection of the Danube River, Vienna.

Marić, J.J., Kolarević, S., Đorđević, J., Sunjog, K., Nikolić, I., Marić, A., Ilić, M., Simonović, P., Alygizakis, N., Ng, K., Oswald, P., Slobodnik, J., Žegura, B., Vuković-Gačić, B., Paunović, M., Kračun-Kolarević, M., 2023. In situ detection of the genotoxic potential as one of the lines of evidence in the weight-of-evidence approach—the Joint Danube Survey 4 Case Study. Mutagenesis. https://doi.org/10.1093/mutage/geac024

Marić, J.J., Kračun-Kolarević, M., Kolarević, S., Nikolić, I., Sunjog, K., Paunović, M., Vuković-Gačić, B., 2021. Application of RAPD method in ecogenotoxicological research

– the Sava River and the Danube River case studies. VODA 2021 Zb. Rad. 50. godišnje Konf. o aktuelnim Probl. korišćenja i zaštite voda.
Slobodnik, J., von der Ohe, P.C., 2015. Identification of the Danube River Basin Specific Pollutants and Their Retrospective Risk Assessment, in: Liška, I. (Ed.), The Danube River Basin. Springer-Verlag, Berlin Heildeberg, pp. 95–110.
Sommerwerk, N., Hein, T., Schneider-Jakoby, M., Baumgartner, C., Ostojić, A., Paunović, M., Bloesch, J., Siber, R., Tockner, K., 2009. The Danube River Basin District, in: Rivers of Europe.

<u>Page 3 paragraph 11 (further referred as comment 6)</u>: The groundwater monitoring is carried out according to the presentation made in the material, through a small number of wells. We believe that in order to have an overview of the pollution of the underground water body (data necessary for the evaluation of the level of diffuse water pollution) and to estimate the influence of the quality of the groundwater bodies on the quality of the water body designated on the Danube River, it is necessary to extend the monitoring through at least 3 boreholes (2 on the banks of Danube River and one downstream of the investment).

Answer: Indeed, the comment is well received, moreover it is in line with the strategy presented in the EIA report. The authors point out that on the site of chemical complex the number of piezometers (used terminology considered equivalent to boreholes) is significant, thus we can already indicate locations for the operating piezometers:

- Nomenclature: X1 (Coordinates N 44^{o}17’05.4’’, E 22^{o}36’52.7’’)
- Nomenclature: X2 (Coordinates N 44^{o}17’1,97’’, E 22^{o}37’13,05’’)
- Nomenclature: X3 (Coordinates N 44^{o}17’11,68’’, E 22^{o}38’50,0’’)
- Nomenclature: X4 (Coordinates N 44^{o}16’41,9’’, E 22^{o}36’42,9’’)
- Nomenclature: X5 (Coordinates N 44^{o}17’3,68’’’, E 22^{o}38’8,2’’)
- Nomenclature: PA -1 (Coordinates N 44^{o}17’09.31’’, E 22°36’38.98’’)
- Nomenclature: PM-1 (Coordinates N 44^{o}17’10,03’’, E 22^{o}36’26,93’’)
- Nomenclature: P-2 (Coordinates N 44^{o}17’19,34’’, E 22^{o}36’32,63’’)

The locations for the existing piezometers are given in Figure 5.7. on page 369 and Figure 5.8 on page 370.

Figure 5.7 Groundwater Sampling Locations.

Figure 5.8 Groundwater Sampling Locations.

X5 (Coordinates N 44°17'3,68''', E 22°38'8,2'') & X3 (Coordinates N 44°17'11,68'', E 22°38'50,0'') are particularly design to monitor potential underground water contamination with respect to potential contamination of Danube River, both downstream of the investment. X2 (Coordinates N 44°17'1,97'', E 22°37'13,05'') on the other hand will be used as direct control on the project location. Moreover, the authors points out that it is foreseen that additional piezometers will be placed for the particular purpose. Please be referred to subsection 9.2.2.5 of the EIA report and particular to page number 622, where a proposal for additional monitoring of soil and groundwater in the area of the Eco Energy complex is

disclosed. In the reference section it has been stated: “The concept of establishing monitoring in order to alert early by establishing three zones of representative piezometers:

A- zone - background piezometers in relation to the position of ICP Prahovo and Danube reflecting the neutral-natural composition of groundwater – where, in addition to the existing X-4 piezometer, two more piezometers, PP-1 and PP-2, being executed, of which PP-1 in the cluster – two piezometers, deeper and shallower;

Leachate monitoring zone in the landfill zone with two piezometers, one of which is the existing X-1 and D-2 whose depth reaches above the HDPE film.

B – zone – placed downstream in the direction of the underground flow towards the Danube in the immediate zone in relation to the position of a potential source of pollution – Landfill for non-hazardous waste; Based on the calculated values of advective transport, this zone should be set to a distance of 125 m in relation to the landfill, namely 3 piezometers, of which NP-1 is in a cluster (deeper and shallower)

C – zone – is set downstream in the direction of the underground flow, as a downstream control zone. Based on the calculated values of the advective transport, the control piezometers should be placed at a distance of 250 m and 500 m in relation to the landfill in the direction of the flow. In this zone, it is necessary to place 3 piezometers at a distance of 250 m from the landfill, with the piezometer CP-1 in a cluster (deeper and shallower). In addition, two more piezometers must be installed at a distance of 500 m.

The above concept is applied to examples of contaminated areas in Lower Saxony – Germany. With the aforementioned concept, it is necessary to include the layers that represent the Perched aquifer as well as the lower intergranular aquifer formed in Pliocene deposits. Figure 9.2 provides a conceptual model of the proposed zoning system for monitoring the subject area.

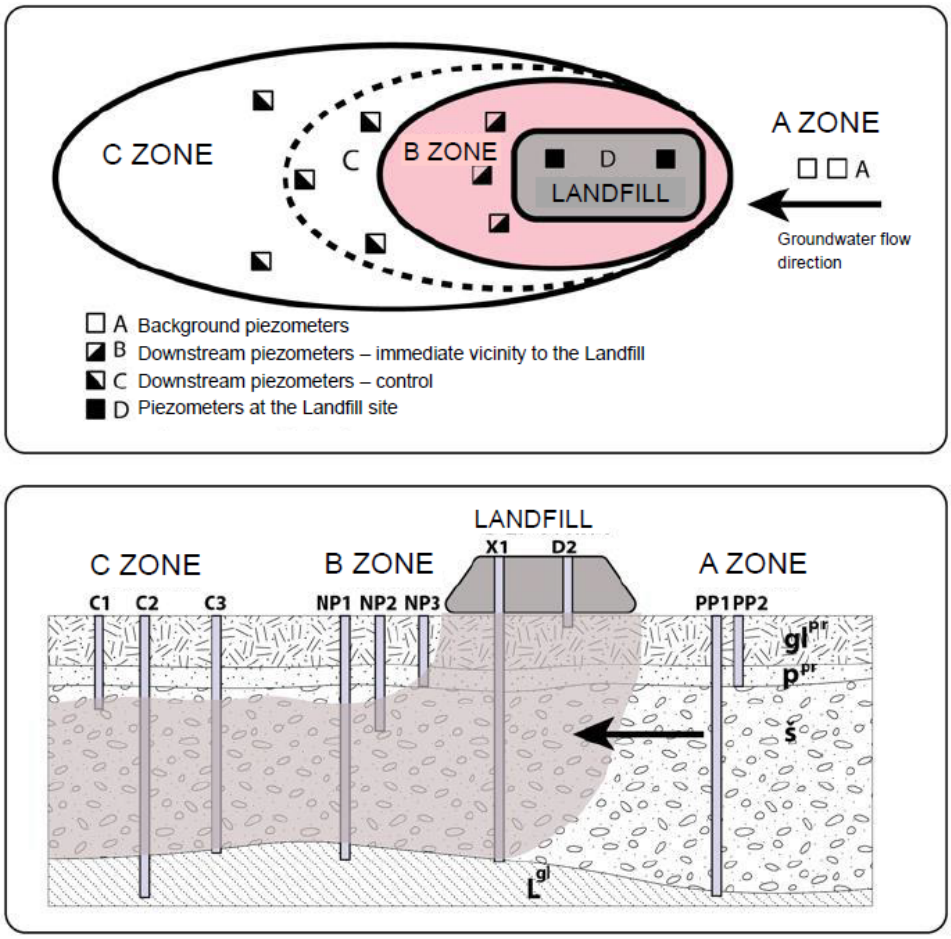


Figure 9.2 Conceptual model of the proposed zoning system for monitoring the subject area."

The concept is later adopted in 9.3. as a measurement requirement. Thereby, the authors believes that the addressed issue is in full alignment with correctly recognized need by the comment issued by Romanian authorities.

<u>Page 3 paragraph 12 (further referred as comment 7)</u>: The report briefly presents the impact of the activities carried out through this project on the aquatic biodiversity of the Danube River, not taking into account all the biological quality elements necessary to establish the quality/ecological potential of surface water bodies (only general information related to macroinvertebrates and fish is given).

Answer: During the preparation of the supporting study (Biodiversity study of the Industrial Complex Elixir Prahovo, 2024, Institute for Biological Research "Siniša Stanković") and related field activities, the most important components of biological diversity have been addressed, starting from aquatic (algae, aquatic vascular plants, macroinvertebrates and fish fauna), terrestrial and semiaquatic insects, amphibians, reptiles, and finally birds and mammals. Aquatic and terrestrial vascular plants have been covered in the same sub-chapter – Floristic characteristic of the area of concern.

In respect to aquatic ecosystems, final report does not involve the review of the results on zooplankton due to two reasons:

1. This biological quality element is not obligatory for the assessment of ecological status based on the EU Water Framework Directive (Directive 2000/60/EC) and consequently is not part of the assessment system, neither in Serbia, nor in Romania. Thus, the data is available only from research activities, quantity of the data does not support the systematic monitoring of changes over the time and could provide wrong interpretation.
2. Based on the data from the international expeditions Joint Danube Surveys 1-4 that were realized in 2001, 2007, 2013 and 2019 (Liška et al., 2021, 2008; Literáthy et al., 2002), as well as the review of zooplankton characteristics along the Iron Gate stretch of the Danube (Simonović, P. et al., 2010), protected and rare taxa are not relevant for this taxa group.

The study approach was to present reliable data relevant to the project. Correspondingly, this approach allows easier interpretation of the study with respect to the field of interest. The study is focused on aquatic habitats and riparian terrestrial zone of the area of interests that will be under the direct influence of construction works and operational phase of the facility. Thus, the detail survey of the data on above mentioned biotic components are presented and discussed for this zone.

References:

Liška, I., Slobodnik, J., Wagner, F., Deutch, K., Sengl, M., Paunović, M., 2021. JOINT DANUBE SURVEY 4 SCIENTIFIC REPORT: A SHARED ANALYSIS OF THE DANUBE RIVER, 1st ed. ICPDR – International Commission for the Protection of the Danube River, Vienna.

Liška, I., Wagner, F., Slobodnik, J., 2008. Joint Danube Survey 2 - Final Scientific Report.

Literáthy, P., Koller-Kreimel, V., Liska, I., 2002. Joint Danube Survey Technical Report. International Commission for the Protection of the Danube River - ICPDR, Vienna.

Simonović, P., Simić, V., Simić, S., Paunović, M. (Eds. ., 2010. Danube in Serbia – Joint Danube survey 2. Ministry of Agriculture, Forestry and Water Management – Directorate for Water, University of Kragujevac, Faculty of Science, Institute for Biology and Ecology, University of Belgrade, Institute for Biological Research "Siniša Stanković," Belgrade.

<u>Page 4 paragraph 2 (further referred as comment 8)</u>: The information on surface waters should also include aspects on water body status/potential and possible impacts.

Answer: Water body status including the potential impact has been assessed in multiple aspects. On the one hand, surface water quality has been presented in zero condition analysis as a part of subsection 5 of the EIA report. More precisely, in page 371 it has been stated:

“Data on surface water quality for the territory of the Republic of Serbia, including the quality of the Danube River, are maintained by the Environmental Protection Agency and are publicly available through the website www.sepa.gov.rs. Currently, the website contains the data "Results of Surface and Groundwater Quality Testing for 2022".

In 2024, in order to determine the zero state of wastewater quality and surface water quality of the Danube River for the needs of construction of the Eco Energy complex, the Institute for Prevention, Occupational Safety, Fire Protection and Development LLC Novi Sad, Branch "27. January" Niš carried out sampling and physico-chemical testing of the quality of waste and surface water at four measuring points, as shown in Table 5.7 and Figure 5.9 (Report on physical/chemical analyses is given in the Annex of Study).

Table 5.7 Wastewater and surface water sampling points

Measuring point	Wastewater	Sampling point	Coordinates	
			N	E
OV1	Wastewater before treatment system	Sampling point manhole at inlet of neutralization pit	44º17’06.89”	22º36’35.39”
OV2	Wastewater after treatment system	Sampling point manhole located in an auxiliary facility at the outlet of waste water from the plant	44º17’07.78”	22º36’37.93”
PV1	Danube River 150 m upstream of the inlet of collective wastewater	The sampling point is located on the bank of the Danube River, 150 m upstream of the wastewater outflow	44º17’27.50”	22°36’58.08”
PV2	Danube River 100 m downstream of the inlet of collecting wastewater	The sampling point is located on the bank of the Danube River, 100 m upstream of the wastewater outflow	44º17’21.08”	22º37’25.39”

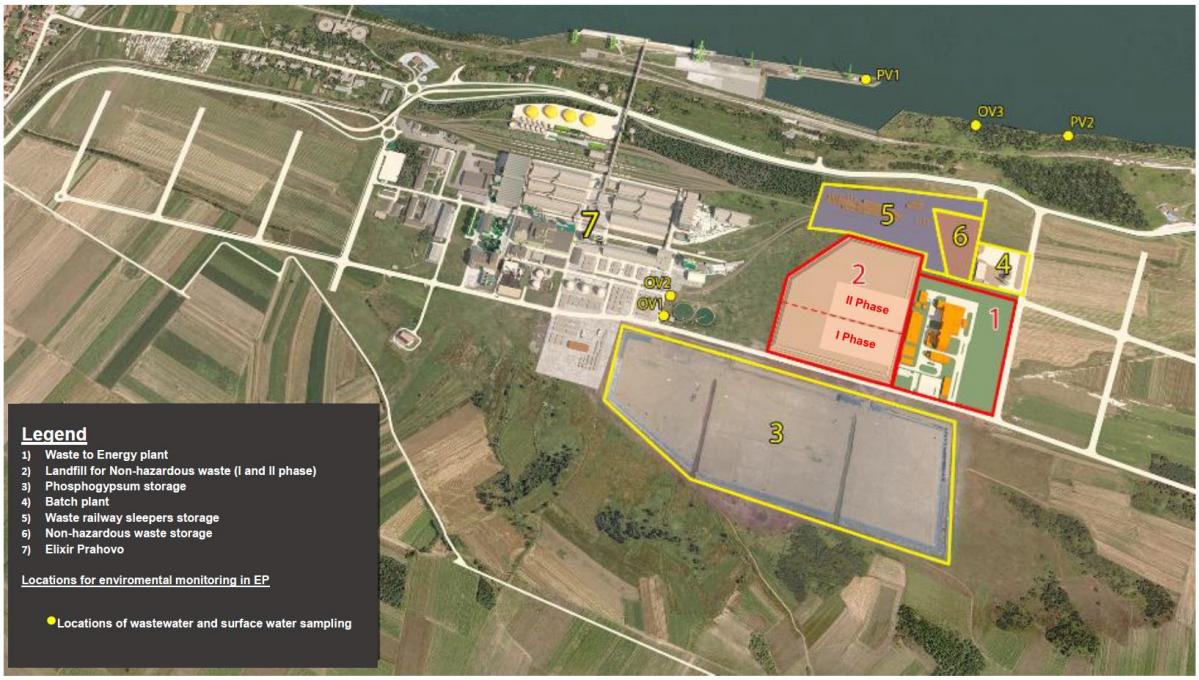


Figure 5.9 Wastewater and surface water sampling locations".

Moreover, verification of the status is provided as annex to the EIA report, this information was later used to model the influence of wastewater release with potential influence on Danube quality. In the EIA subsection 6.1.1.2 the impact on water quality during construction phase has been assessed as without concerns. On a similar note, in subsection 6.2.1.2.1 the effects on Danube quality as the final recipient of the Subject Project treated wastewater has been modelled. The results conclusively showed that there would not be any violation of emission limits outlined for such installations and, more importantly, deterioration of Danube water quality as a consequence of the Subject Project execution. 100 m downstream of the wastewater discharge point most of the Subject Project characteristic wastewater pollution parameters would be already negligible or even barely detectable. Additionally, modelling the effects of pollutant emission into the air from the Subject Project installation even under the most unfavourable weather conditions, and in the case of accidental situations with the most damaging scenarios of air pollutants release, didn't indicate any impact on the quality of Danube. The theoretical extremely improbable most damaging scenarios are modelled and given within the EIA subsection 7.2.1 (Scenario 12), hence we would refer to this part of EIA study for more details. The study conclusively determines that there is no danger for deterioration of Danube quality and/or any adjacently connected river/water streams as a consequence of the Subject Project implementation.

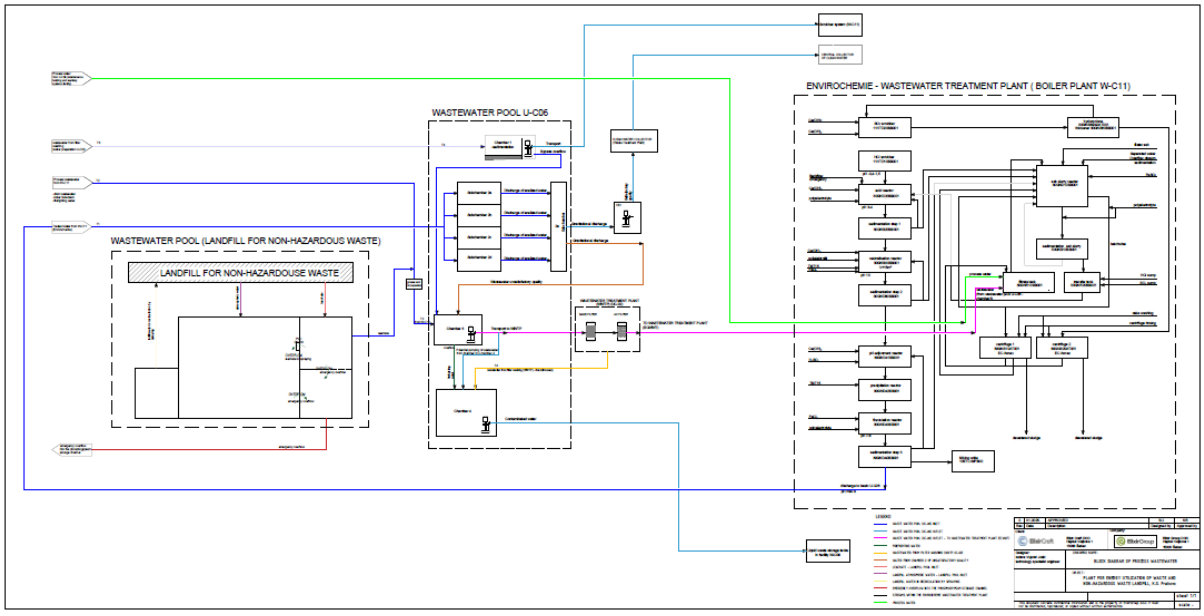
The quality of water body with corresponding hazard substance contamination can be further directly traced via official documents, ICPDR reports (Accidental Pollution Hazard in the Danube River Basin, 2023 and Guidance Document on Managing Hazardous Substances Pollution in the Danube River Basin, 2024). Moreover, a baseline classification can also be found in Sinteza Calitatii Apelor Din Romania in Anul 2023 where on the main Danube course

three water bodies are identified as a good ecological potential and good chemical quality. More importantly, closer to the project of interest two accumulation positions are categorized as with a good ecological potential and good chemical quality. Literature survey findings are addressed in the EIA report in paragraph 2.6.2 under the part noted as Hydrological characteristics (pages 95 - 99).

<u>Page 4 paragraph 3 (further referred as comment 9)</u>: Information on the complete leachate circuit from the landfill of non-hazardous waste (collection, storage, treatment, etc.) that could potentially have an impact on groundwater is presented disparately. A schematic representation of the entire flow should be included for easier analysis and monitoring of the flow of pollutants.

Answer: A schematic representation will be provided in the amended EIA report within subchapter 3.5.5 where it will be outlined:

<u>"the overall schematic representation of the entire process wastewater treatment schematic representation including landfill leachate treatment is provided on the Figure.</u>



<u>Figure. process wastewater treatment schematic representation. "</u>

The leachate is collected with a drainage pipe system above the impermeable HDPE foil, before being subsequently directed to the wastewater treatment facility as one of the water streams for purification. The flowing is disclosed in 8.3.3 "

- It is planned to establish on the landfill a completely closed system of water circulation from the landfill. Two separate water collection systems are envisaged:

- Leachate collection system by which water is transported to the wastewater pool provided in the space of the Waste-to-Energy Plant and
- The system for collecting atmospheric runoff from the landfill slopes to be collected and used for spraying water on the landfill slopes, thus achieving water recirculation.

- From the leachate pool, an emergency overflow to the stormwater pool is planned, in case of termination of the operation of the pump for transport to the wastewater pool in the area of the Waste-to-Energy Plant

- An emergency overflow is planned from the stormwater pool, which in the event of extreme precipitation will allow water to be evacuated into the peripheral canal of the phosphogypsum storage facility, which is located on the south side of the future Landfill for non-hazardous waste. ".

<u>Page 4 paragraph 4 (further referred as comment 10)</u>: If, after the implementation of the project and the application of the water protection measures (generally presented in chapter 8.3.2.5 *Measures for the protection of waters and solutions*), the monitoring results indicate that the chemical status/ecological potential of the Danube waters and the chemical status of the groundwater are not good and/or their deterioration is observed, it is necessary to plan additional measures to reduce the emissions of chemical substances into the water resource and to adapt the environmental impact monitoring program (monitoring). In this context, references should be made in the study on environmental impact assessment (i.e., in chapter 8.4 *Other measures that may affect the prevention or reduction of harmful effects on the environment*).

Answer: The authors point the reader towards answers given to comment risen in the letter on Page 3 paragraph 7 (comment 2) and Page 3 paragraph 11 (comment 6). Namely, each wastewater release stream is directly measured with a possibility of direct stream quality determination. Moreover, a dedicated specifically positioned piezometers for detection of underground contamination are foreseen for the location and downstream towards Danube water connection. Disclosed strategy allows for direct monitoring of potential influence of the project on Danube quality. Any deterioration of the Danube quality resulting from the facility operation would imply mismanagement of the early contamination detection systems. Consequently, potential Danube contamination is considered as an accident scenario with describe measures to be taken in such scenario in 8.2.2 where it is stated:

"-Accident response measures will be defined by the Safety Report and the Accident Protection Plan, to which the consent of the competent Ministry of Environmental Protection will be obtained within the legally prescribed period.

- In the event of a leak or spill of hydraulic and insulating oil, or small quantities of diesel, secure the spill site, pour the spilled quantity with a sufficient amount of absorbent, collect

the contaminated absorbent and store it in appropriate containers until it is handed over to an authorized operator
-If there has been a leakage of diesel outside the area where the diesel generator is located and environmental pollution that requires remediation or remediation of the area by specialized companies, inform the ministry responsible for environmental protection as soon as possible
- If there is a fire in the waste bunkers, take the contaminated water/foam resulting from the fire extinguishing, through the grate openings provided at the bottom of the bunker, to the collection pool T.4 Fire extinguishing water pool 1
- Bearing in mind that these are wastewater that may be loaded with various pollutants whose treatment is not possible within the wastewater treatment plant in question, these waters should be pumped to the pumping station for water from fire extinguishing, pumped to the liquid waste storage from where they will be dosed to the boiler plant for thermal treatment
- In the event of an accident at the facility in question, the project holder is obliged to immediately inform the ministry responsible for environmental protection, the local self-government unit (city) and the authorities responsible for handling emergency situations, in accordance with the regulations governing the said activity, about the circumstances related to the accident, the presence of hazardous substances, the available data for assessing the consequences of the accident on people and the environment and the emergency measures taken
- In order to ensure timely and adequate response and make immediate decisions, which contributes to reducing the consequences or preventing the development of an emergency situation, define the method of notification of emergency events
In order to ensure timely and adequate response and make immediate decisions, which contributes to reducing the consequences or preventing the development of an emergency situation, define the method of notification of emergency events.
- It is the obligation of the project holder to develop a post-accident monitoring program after possible accident situations, which will contain planned activities for monitoring the state of the environment in terms of pollution by substances from the group of hazardous substances involved in the accident."

The authors would like to add with respect to the correctly raised issue that additional measures will be foreseen in chapter 8.4 (Other measures that may affect the prevention or reduction of harmful effects on the environment), further elaborating on the early detection borehole system explained regarding comment risen on letter Page 3 paragraph 11 (comment 6). Thus, a new paragraph will be added to the EIA study, on this topic, which will read as follows:

"Considering that all leachate water is treated on the facility technology wastewater, any change in groundwater quality determined after analysis of samples taken from piezometers

in Zone A, B or C, will be considered as an accident scenario inducing a corrective action including:

- Physical introduction of water hydraulic barrier which changes the groundwater elevation altering the flow with a goal of preventing flow towards river Danube as close as possible to the landfill site.
- Weekly verification of downstream groundwater quality during the period of hydraulic barrier existence.
- Extraction of contaminated ground water and directing it to wastewater treatment facility of the complex during the period of active hydraulic barrier measures.
- Execution of routh cause analysis with a goal of determination of the occurrence nature, i.e., continuation of the observation or one-time event notification and/or determination of the type of contamination with corresponding contaminant migration mechanism.
- Execution of the expert determined mitigation program after the completion of the rough-cause analysis (physical, mechanical or civil construction issue require maintenance work, inert layer induction on particular landfill locations, introduction of layers of material with metal sorbing characteristics, etc.).
- Reestablishing the groundwater connection with Danube River or inducing a permeant water flow mechanical barrier in accordance with an expert mitigation plan.".

In an unlikely event (manipulation areas are on impermeable concrete layer) of surface soil spillage on the location an additional measure will be introduced in chapter 8.4 (Other measures that may affect the prevention or reduction of harmful effects on the environment), in a new paragraph to be added to the EIA study, on this topic, which will read as follows:

"If there has been a leakage of fuel or chemical on the project affected surface soil with an environmental pollution as a result:

- Remediation of the area by specialized companies will be carried out.
- Ministry responsible for environmental protection will be informed as soon as possible.
- Site operator will execute any prolonged recommendation method provided in the expert determined mitigation program provided after the completion of the rough-cause analysis (e.g., physical remediation methods, chemical remediation methods, biological remediation, phytoremediation).".

The authors are pointing out that all state-of-the-art measures are taken in order to prevent a scenario of Danube River contamination. Namely, stabilize waste leaching characteristics are such that risks are minimal, based both on material leaching behaviour and its filterability. Moreover, HDPE foil have large elongation capabilities before failure. Obviously, all layers are utilized to protect the HDPE foil from direct impeachment and potential failure situation.

Finally, the soil on the location as well demonstrates low filterability behaviour (see landfill accident scenario modelling) further deteriorating the need for extra established and outlined monitoring plan with above recommended reaction measures.

Page 4 paragraph 5 (further referred as comment 11): We believe that a more rigorous monitoring of emissions, especially of POPs, should be included in the EIA report considering the amendments to the IED Directive in 2023, if the IED Directive has been transposed in national legislation (https://zerowasteeurope.eu/press-release/long-awaited-revamp-of-industrial-emissions-directive-improves-dioxin-monitoring-in-incinerators/).

Answer: The author emphasises the fact that the topic of prohibition and/or mitigation of POPs emissions is being addressed in the project in question on several levels:

1) Firstly, it must be pointed out that "waste containing more than 1% of halogen organic substances expressed as chlorine cannot be treated in the boiler. It is strictly forbidden to receive waste that is explosive, flammable, infectious, radioactive, waste materials containing or contaminated with polychlorinated biphenyls (PCBs) and/or polybrominated triphenyls (PCTs) and/or polybrominated biphenyls (PBB), waste containing cyanides, isocyanates, thiocyanates, asbestos, peroxides, biocides, cytostatic, electronic waste. Additional restrictions on admission to the plant in question are waste substances in the form of aerosols, as well as organometallic compounds (spent metal-based catalysts, or organometallic wood preservatives) and aluminized paints." as expressed on page 152 of the EIA report. Treatment of waste containing POPs is not intended on the location. Moreover, restricting the content of halogen organic substances to less than 1% considerably minimizes the release of PCDD/F and PCBs targeted as pollutants in the reference documents.
2) Secondly, the incinerator is being engineered, constructed, and operated according to best available techniques (BAT), as described in the EU BAT Reference Document on Waste Incineration (BREF WI). Several of the measures described in the BREF WI aim at a reduction of POPs emissions, such as the rapid cool-down of the flue gas after the boiler that helps to shorten the residence time of the flue gas within the critical temperature window of between 200 and 450 °C (i.e. where dioxin de-novo-synthesis takes place) to a minimum.
3) Thirdly, the flue gas system enclosed in the project proposal has extra measures to allow for control of pollutants to be emitted via boiler stack. Thereby, the flue gas cleaning incorporates active carbon adsorption, wet scrubbing and catalytic selective NOx reduction (SCR). As it is commonly known, the SCR process not only mitigates nitrous oxides but simultaneously also chemically destroys organic compounds including PCDD/F and other POPs (cf. https://www.umweltbundesamt.at/fileadmin/site/publikationen/m116.pdf, page 43; https://pureadmintest.unileoben.ac.at/ws/portalfiles/portal/2386734/AC03473496_2001.pdf, chapter 4.2.5.1;).

All mentioned technical solutions are also active in the domain of PCDD/F and PCBs reduction, resulting in a very low expected emission levels from the facility (as presented in Table 3.49). Consequently, the state-of the art diffusion modelling did not indicate any violation expectation for the prescribed daily average limit, with highest emission rate values far below the limit (see Figure 6.11 on page 416). The noted figure indicates that the effect of PCDD/F and PCBs diffusion on Romania territory is non existing.
The authors point out that incinerators are conclusively recognized by the industry and EU member governmental bodies as dioxin and furan destruction facilities, since they destroy more dioxins and furans than they produce, as demonstrated in the following linked documents:

- https://www.bmk.gv.at/dam/jcr:40b93468-8ffc-4581-a7f3-a0dedec04350/Whitebook_Waste_to_Energy.pdf (see page 52 or the reference)
- www.abfallratgeber.bayern.de/publikationen/abfallbehandlung/doc/muellverb.pdf (see abiding 20 of the reference)
- https://epub.sub.uni-hamburg.de/epub/volltexte/2009/2846/pdf/dioxinbilanz.pdf (see Tabelle 25 of the reference)

These studies conclusively demonstrate that such facilities destroy named pollutants and as such contribute to the general environment conditions, in other words, this is a direct contribution to human health.
The EIR demonstrates in Table 9.1 emission limits and standards to be applied for PCDD/F and PCDD/F + dioxin- like PCBs emissions, with an explanation on page 596 “Table 9.4 shows the mean emission values for dioxins and furans over a sampling period of at least 6 h and at most 8 h. The emission limit values apply to the total concentrations of dioxins and furans, calculated on the basis of factors of equivalent toxicity.

Table 9.4 Mean emission values for dioxins and furans over a sampling period of at least 6 h and at most 8 h. The emission limit values apply to the total concentrations of dioxins and furans, calculated on the basis of the toxic equivalent factors in Appendix 1. of Regulation on technical and technological conditions for the design, construction, equipping and operation of plants and types of waste for waste thermal treatment, emission limit values and their monitoring ("Official Gazette of the RS", no. 103/2023).

Dioxins and furans	0.1 ng/Nm3

In section 9.3 page 632 it is specified that individual measurement of the concentration of dioxins and furans should be determined at least twice a year, whereby these measurements in the first year of operation are carried out at least four times a year with an interval of three months. The project holder commits to the Emission Limit Value (ELV) prescribed by the conclusions on the best available techniques and BREF WI documents from 2019. (Commission implementing decision (EU) 2019/2010 of 12 Nov. 2019 establishing the best available

techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration) which are stricter than Serbian national emission limits. Amendments to the IED Directive in 2023 are not transposed in the national legislation of most EU countries due to recent nature of the alterations, similarly this legislation has not been transposed into Serbian legislation.

The project holder is willing to commit to a start-up/shut down PCDD/F and PCDD/F + dioxin-like PCBs emissions measurement in the monitoring program every three years as required by the final text of the amended Directive (see Directive (EU) 2024/1785 of the European Parliament and of the Council of 24 April 2024 amending Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC on the landfill of waste Text with EEA relevance.), *with a mandate for the first year of operation with a reporting obligation.*

Therefore, the following text will be added to section 9.3 in the Table titled Tabular overview of the environmental impact monitoring program within the Waste-to-Energy Plant under the row Air Emission Testing/Emitter of Boiler plant Coordinates: [Lat/Long] 44.284570 22.616845 and particular column titled frequency of measurement:

"Emissions during start-up and shutdown while no waste is being incinerated, including emissions of PCDD/F and dioxin-like PCBs, shall be estimated based on measurement campaigns, carried out at regular intervals, such as every three years, carried out during planned start-up or shutdown operations".

Moreover, the project holder would induce a specific operating measure (to be introduced in section 8.1.1) to reduce the operating risk:

- "Start-up/shut down operations should be carried out in such a way that first/last waste introduced to the boiler contains minimal amount of organic halogenates.".

The authors point the reader towards the supporting study Analysis of Environmental Factors, 2023 where it is disclosed on page 36: "Report on the measurement of mass concentrations of dioxins and furans (PVDDS/PCDFS) in ambient air in the vicinity of the production plant "Elixir Prahovo" in Prahovo, "Aerolab" doo, Belgrade, 21-24. 06.2021

Number of measuring points 2, south-west and north-east of the production facilities of the factory. At the distance of about 200m. Measurement period: 21.6-24.6.2021 (2 measurements at each point).

Measurement results: individually measured mass concentrations of all 17 toxic dioxins and furans, in all four samples and four blank trials, were below the detection limits of the analytical method. Also, the calculated mass concentrations of dioxins and furans expressed

over the toxic equivalent of the mixture (Toxic Equivalency) were below the detection limits of the analytical method (less than 0.3 pg/m3).".

The project holder established a baseline measurement for the contaminants at stake, thus would commit to follow up location measurement every 3 years with a reporting obligation. Contamination levels can only be associated to emissions to air, thereby clear baseline follow up provides adequate level of precaution. The commitment will be added to section 9.3 in the Table titled Tabular overview of the environmental impact monitoring program within the Waste-to-Energy Plant under the row Ambient air quality testing measuring point as a new column: "mass concentrations of dioxins and furans" with a measurement frequency "once in 3 years".

Page 4 paragraph 6 (further referred as comment 12): In the "Report on early consultations conducted with the local community regarding the implementation of the Waste-to-Energy Plant Project in Prahovo" only the benefits of making this investment were presented, namely: alternative to waste storage, job creation, and its importance in the circular economy. The concerns of the European Union in relation to the biomonitoring studies of emissions of persistent organic products (dioxin, furan) found near two waste incinerators in Slovakia and the Kingdom of the Netherlands were not presented (https://zerowasteeurope.eu/press-release/new-zwe-biomonitoring-report-alerts-of-a-high-level-of-dioxins-around-3-european-incinerators/).

Answer: The reader is point to the answer given to comment risen on letter Page 4 paragraph 5 (comment 11) covering a topic related to POPs emissions and monitoring. The author of the EIA report would point out that the referenced press-release report covers only the monitoring aspects with limited exposure to considerations related to the nature of treated waste and more importantly utilized technology solutions for achieving target emission levels. The listed article relates to 3 incinerators and concentration of contaminants in surrounding areas, while the other articles mentioned in the comment are related to a poorly functioning incinerator facility in the Netherland and the cement kiln facility in Slovakia. The article itself for the case of Netherlands illustrates significant operating problems of the facility. On the other hand, in the technical aspect one cannot compare a cement kiln incineration with the project at hand due to limited flue gas treatment measures characteristic for cement production.
The project considered in this EIA report is a state-of-art facility (read answer to comment 11) planned for an industrial zone which is completely different comparing to referenced installations. The combination of factor, technical solutions and industrial surrounding diminishes the relevance of the referenced findings.
Moreover, we would point to your attention to in-depth research work carried out by the German Environment Agency in the reference document: https://www.umweltbundesamt.de/en/press/pressinformation/dioxin-in-animal-feed-

source-of-contamination-not. They analyzed different PCDD/F contaminated food sources on the basis of their congener profile and came to the following conclusion (cf. para 1+2):
"UBA's analysis did, however, succeed in ruling out some sources such as the metal and cement industries, and neither can other industrial sources be linked to the current contaminations. The congener profile of the milk fat fatty acids in the contaminated feed shows no similarities to existing environmental samples. Data on dioxin emissions from other industries also reveal no evident matches that might point to an industrial source.
By way of comparison outside tests on waste and transformer oils were also reviewed, the results of which show similarities with the milk fat fatty acid congener profile. The database is too limited, however, to draw any valid conclusions. The most recent investigations done by the Chemisches und Veterinäruntersuchungsamt Münster-Emscher-Lippe, which were published today, support the hypothesis that the contamination stems from industrial fats which should not have been used to produce animal feed and other foodstuff.".
For a comprehensive study reports on PCDD/F + dioxin- like PCBs emissions please be referred to document provided in response to comment risen on letter Page 4 paragraph 5 (comment 11).

Page 4 paragraph 7 (further referred as comment 13): The environmental impact assessment report contains in chapter 6, subsection 6.2.2, the summary of the impact study on the health of the Serbian population Negotin. In this summary, we did not find data on the impact that the proposed objective will have on the health of the population in the areas near the border, with references to the population of Romania, located in the area of influence of the objective.

Answer: Indeed, the health impact is dominantly based on the population of Municipality of Negotin, primarily due to potentially most affected community of Prahovo which belongs to the Municipality. Nonetheless, all the conclusions with regards to the cross-border influence of the project, including the potential impact on human health is given through the document. For example, the influence of wastewater release to the River Danube in accident scenarios and in the case of potential influence have found to be negligible. Thereby, influence on health of Romania population is negligible. The same conclusion was reached via air emission diffusion modelling, where it was conclusively demonstrated that the impact is negligible and in accordance with limit values for required air quality (see section 6.2.1).

On the other hand, the most important accident events are accidents classified as level II and level III. There are no accidental scenarios classified as level IV or level V, with full respect to the distances of the cross-border municipalities of Bulgaria and Romania. Accident classified as level III, with the highest reach which extends the boundaries of the subject project complex, is linked to accidents involving ammonia water, as the furthest range for toxic concentrations is 680 m. Effects of subsequent ignition remain within 11 m from the spill site, within the boundaries of the subject project complex. From a perspective of extra precaution

in the modelling step, a special Scenario (accidental situations at the Waste-to-Energy Plant) has been set to assess the impact of a potential accident on river Danube, with the following conclusion (page 516):
"Applying the above equation to the input parameters, it is concluded that the calculated pollutant levels (PM and recalculated values of NH_3, HCl, HF, SO_2 i NO_x) are far below the previously stated values, meaning that accident situations at the Waste-to-Energy Plant do not lead to pollution of the Danube River from pollutants released into the air."
All the measures found to be necessary considering the subject project impact assessment, regulation and technology required are presented in the EIA chapter 8. included measures which must be taken to protect all factors of the environment and human health (plans and technical solutions for environmental protection), which relate to the construction, regular operation, termination of use or removal of the subject project, as well as measures for accident prevention during construction and operation, accident response measures and elimination of the consequences of the potential accident.

Finally, the authors are in agreement with the comment that structuring a document in a manner which would specifically address the project potential public health influence in Romania would bring clarity.
Thereby, the authors are committed to provide this amendment to the document in the revised version within a new subsection 6.2.3.1 titled "Population health in Romania".

Page 4 paragraph 8 (further referred as comment 14): Taking into consideration that due to the location of the proposed objective within the industrial complex in Prahovo, a potential cross-border pollution effect cannot be excluded, we request the transmission of the impact study on the health of the population that was the basis of the environmental impact assessment report in which the data on the potential risk are highlighted to which the Romanian population is exposed.

Answer: Please note that the impact study on human health, according to Environmental Impact Assessment Act of the Republic of Serbia, is a part of the EIA report in accordance with the subject project EIA scope and content determination issued by the Ministry of Environmental Protection, Republic of Serbia, on June 17th, 2024. All comments and proposals submitted in the letter Reg. No DGEICPSC /10258 /6.04.2024. dated April 6th, 2024, were respectfully included in the above-mentioned document issued by Ministry of Environmental Protection, Republic of Serbia. Human health is already elaborated in the EIA report, please be directed to answer provided for comment risen on letter Page 4 paragraph 7 (comment 13) regarding practical conclusions of the EIA report with proposed amendments.

Due to mandatory need imposed by The Ministry of Environment, Water and Forests of Romania, deviating from Serbian national procedure, the project holder is willing to comply with your request and provide a Human Health Impact Assessment Study as additional

supplement to the subject project EIA study. Please find the Human Health Impact Assessment Study as Attachment 3 to this letter.

Page 4 paragraph 9 (further referred as comment 15): In addition to the population of the villages of Izvoarele and Gruia, other localities located on the banks of the Danube that are supplied with drinking water from the Danube river (Calafat, Maglavit, Cetate) must also be taken into account. Considering that the Danube river is at a distance of about 500m in the north direction from the location of the proposed objective, it is estimated that following the construction/operation of the project, for the population of the riverine areas, located downstream of the objective, which are supplied with water drinking water from the Danube, there may be a potential health risk.

Answer: Authors point out that in terms of both, air pollution and water (read Danube) pollution, a cumulative approach has been adopted. Namely, in the EIA subsection 6.2.1.1.6 (and air quality modelling assessment studies provided as appendix) a cumulative emission study has been done considering current emissions from the existing installations of Elixir Prahovo. Similarly, in the modelling approach described in the EIA subsection 6.2.1.2.1 the effects on Danube water quality have been assessed cumulatively considering treated wastewater quality of the existing installations within the area of industrial complex in Prahovo.

By comparing the results of the Danube River pollution modelling due to the discharge of collective wastewater from the existing Elixir Prahovo complex and the addition of the future subject project complex, it can be observed that no parameters exceed the concentration limit values of the tested parameters. Moreover, it should be borne in mind that based on the results of the "zero state" of the Danube River water quality, it can be stated that in its current state there is no to negligible load of the polluting substances characteristic for expected wastewater to be discharged from the future subject project complex. Bearing in mind the above, as well as the fact that all pollutants in wastewater from the subject project installations will be below the Emission Limit Value (ELV) prescribed by the conclusions on the best available techniques and BREF WI documents from 2019. (Commission implementing decision (EU) 2019/2010 of 12 Nov. 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration), it can be stated that after putting the subject project into operation, there would be no cumulatively higher values of the concentration of polluting substances in the collective wastewater discharged into the Danube River. Flow modelling additionally shows that concentrations already 100 m downstream from the wastewater outlet are negligible. At 100 m downstream from the outlet is the relatively highest load (in relation to the limit value) of chemical Oxygen Demand (COD), which is 22 times less than defined by the Regulation on limit values of polluting substances in surface and underground waters and sediment and deadlines for reaching them (Official Gazette of RS, No. 50/2012).

On the other hand, among the parameters not regulated by the Regulation, the highest relative load (in relation to the limit value) is Tl, which is 1667 times less than the concentration prescribed by the conclusions on the best available techniques and BREF WI documents from 2019 (Commission implementing decision (EU) 2019/2010 of 12th November 2019 establishing the best available techniques conclusions (BATC), under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration (notified under document C(2019) 7987)).

Additionally, modelling the effects of pollutant emission into the air from the subject project even under the most unfavourable weather conditions, and in the case of accidental situations with the most damaging scenarios of air pollutants release, didn't indicate any impact on the quality of Danube.

Determined concentrations 100 m and 200 m downstream of the treated wastewater discharge point are negligible in concentration and to a large level barely, if at all, detectable. The study results conclusively showed that there would not be any violation of emission limits outlined for such installations and, more importantly, deterioration of Danube water quality as a consequence of the subject project execution.

After expressing all the issued facts, it is concluded that there cannot be any harmful influence on the River Danube which could in any way have an effect on population health neither of Negotin municipality nor the cross-border municipalities.

Considering the conclusions that Danube quality would not deteriorate as a consequence of the subject project implementation, it can be concluded that there are no possibilities that any downstream connected river system and/or connected underground water sources could be affected, nor is any associated impact on human health expected.

In all modelling approaches it has been demonstrated that the effect on air and water quality in Romania by implementation of the subject project would be negligible. Therefore, this conclusion stands for any transboundary location in Romania as well.

To emphasize this conclusion, it will be introduced to the revised EIA report with a goal of clarifying conclusions potentially affecting population in Romania, as proposed in answer to comment risen on letter Page 4 paragraph 7 (comment 13). Please be referred to the Human Health Impact Assessment Study, provided as Attachment 3 to this letter, for conclusions on potential influence of the project on general population.

<u>Page 5 paragraph 2 (further referred as comment 16)</u>: Taking into account the fact that the Elixir Prahovo industrial platform through its existence and operation can cause air pollution in the vicinity, the construction and operation of the proposed objective will have a

synergistic effect of increasing air pollution in the area with a potential risk to the health of the population in the vicinity. Given the existence of the phosphogypsum deposit Phosphea Danube DOO, belonging to the Elixir Prahovo complex, 900m west of the lot boundary of the future waste-to-energy plant and non-hazardous waste repository (solidification), there may be a synergistic effect of substance emissions odours in the air surrounding the vicinity.

Answer: As indicated in the answer given to comment noted with a number 15 (related to comment on letter Page 4 paragraph 9), in the EIA subsection 6.2.1.1.6 (and air quality modelling assessment studies provided as appendix) a cumulative emission study has been done considering current emissions from the existing installations of Elixir Prahovo. In practical terms, both phosphogypsum deposit and solid stabilized waste intended for depositing have been included in the modelling effort as a surface source of PM emissions in a cumulative manner for the future state. Please be referred to figures 6.4, 6.5 and 6.12 in the EIA report for PM emission diffusion modelling results (and air quality modelling assessment studies provided as appendix to the EIA report). It is stated in the report on page 419: " By analysing the obtained results, it can be concluded that when it comes to components that are currently emitted (CO, SO_2, NO_2, PM10, PM2.5, HF, HCl, NH_3) and that will also be emitted from the emitters of the future plant, including the Landfill for non-hazardous waste, it was concluded that the dominant influence has the existing emitters (within the complex of Elixir Prahovo and Phosphea) or in the case of particulate matter, surface sources for both the current and the future state (phosphogypsum warehouses), while the impact of the future Waste-to-Energy Plant and Landfill for non-hazardous waste (solidificates) is practically negligible.". Additionally on the same page it is stated: "Also, potential zones with exceedances of the limit values of these components occur on uninhabited areas in the immediate vicinity of the property limit of the chemical industry complex in Prahovo.".

For clarification, the reader should consider that solidificate as a part of the subject project is a material with similar characteristics as lean concrete. Therefore, it is not possible to have any odour emissions associated with the waste stream. Moreover, the considered PM emissions from such material are exaggerated in the modelling strategy and should be considered only as a theoretical possibility for which negligible influence has been determined. On the other hand, potential odours from the facility are modelled using a proxy model compound, TVOC, potentially emitted from the boiler stack in regular operation of the facility and from waste pretreatment stack in case boiler is out of operation. Limit values for TVOC are not defined in the air quality regulation in Republic of Serbia, as well as in EU legislation. To give a semi-quantitative estimate of the order of magnitude of the obtained results, the limit value of 400 $\mu g/m^3$, which refers to indoor air quality and which is prescribed by the Ministry of Health of Japan (https://www.nihs.go.jp/mhlw/chemical/situnai/kentoukai/rep-eng2.pdf). Conducted studies conclude that for both operating scenarios, the TVOC emissions are in their maximum close to the facility significantly lower compared to the indicative mentioned limit value.

Obviously, the modelling results show that there is not potential influence and odour to be expected in the neighbouring Romania and Bulgaria.

<u>Page 5 paragraph 3 (further referred as comment 17)</u>: In the documentation received, we did not find references to the impact determined by the ionizing radiation emitted by the dust from the phosphogypsum composition (given that the industrial unit for the production of phosphogypsum is already operating on the industrial platform of the Elixir complex), which in certain climatic conditions can generate polluting emissions and no references of the impact from the perspective of the operation of the objective proposed within the Elixir energy complex.

Answer: The authors would like to point to the attention of the reader that phosphogypsum related activities are in no means a part of the subject project. For the purpose of modelling current and anticipated conditions within chemical park have been evaluated as a zero-condition point of interest for particular emissions related to the project scope.

Nonetheless, the project holder is willing to provide additional required information from Elixir Prahovo Company, who is the operator of the phosphogypsum storage. Given that phosphate minerals and phosphate rock may contain traces of natural radioactive elements, which are naturally present in geological formations, in accordance with the Law on Protection from Ionizing Radiation and Nuclear Safety (Official Gazette of RS No. 95/2018 and 10/ 2019) soil and stored phosphogypsum were tested.

In order to assess the exposure to radon and external gamma radiation of personnel working at the phosphogypsum storage in the Elixir Prahovo Company, the measurement of the concentration of radon (^{222}Rn) in the air immediately above and in the phosphogypsum material matrix and the strength of the ambient dose equivalent of ionizing radiation at the Elixir Prahovo phosphogypsum storage were carried out. Phase I and O gamma spectrometric analysis of phosphogypsum samples to assess exposure to ionizing radiation. The measurements were carried out at a total of 18 positions within the phosphogypsum warehouse. According to the Rulebook on the limits of radioactive contamination of the person, work and environment and the method of decontamination (Official Gazette RS 38/2011), the limit for disposal of materials into the environment for natural radionuclides, was not exceeded for phosphogypsum. The estimate of the radon dose equivalent for Elixir Prahovo employees who spent most of their working time at the phosphogypsum storage was also found to be in accordance with the recommendations of international organizations.

According to the Rulebook on the Limits of Radioactive Contamination of the Person, Work and Environment and the Method of Conducting Decontamination (Official Gazette, No. 38/2011), the soil was also tested by sampling at five locations. The results of radionuclides

activity in all five samples confirm that neither natural nor artificial radionuclides were detected in concentrations above the maximum allowed values.

The measured values are available upon request in the following reports:

- Report on the measurement of the concentration of radon (^{222}Rn) in the air immediately above and in the phosphogypsum material matrix and the strength of the ambient dose equivalent of ionizing radiation at the Elixir Prahovo phosphogypsum storage - Phase I and 0 gamma spectrometric analysis of phosphogypsum samples to assess exposure to ionizing radiation, University Faculty of Science and Mathematics in Novi Sad, June 5th, 2020.
- Radioactivity test report no. 5404262201-5, Institute for Prevention, Niš, May 22nd, 2024.