Reply to

MINISTRY OF ENVIRONMENT AND WATER BULGARIA
99-00-101
March 15, 2024, Sofia

General comments on the replies submitted:

The main element of the investment proposal (IP) is the construction of a metal structure hall and the purchase, installation and operation of a rotary incinerator for the incineration of medical waste and animal waste. In addition, the infrastructure will include the construction of a concrete emptying basin, concrete platforms, fencing, lighting system, execution of drilling and internal network for water supply and sewerage, location of wastewater pretreatment plant.

The answer provided to question III.1. on page 98 continues to confirm the information that the incinerator will not only accept waste from hospitals, as indicated in the name of the investment project (IP), but will also accept animal waste, food waste and other waste. We therefore draw attention again to the fact that the project title should be corrected to include animal waste and that the assessment carried out and the measures proposed in the report should be complete.

Answer:

In the application for a town planning certificate, according to the provisions of Law 50/1991 on the authorisation of construction works, the title of the project is listed "generically" with regard to the main activity of the project for which the building permit is sought. The description of the component parts of the investment, installations, access routes, lighting installations, site plans, technical-constructive characteristics, strength calculations, etc. are entered in the DTAC (technical documentation for construction authorisation). The DTAC is also the documentation which is analysed and which will form the basis for obtaining all the necessary approvals for the building permit. In conclusion, all the documentation on the environmental impact assessment of a project is done by analysing the DTAC and not the title of the urban planning certificate.

The responses provided do not contain specific details and do not provide further clarification on the content of the corrected EIA Report for the project. The responses provided mainly contain excerpts of text from the EIA Report, but do not provide clarifying information to support the studies carried out.

Answer:

All the answers provided were detailed and complete and very explicit for each question. The fact that these answers also provided excerpts from the EIA Report only served to show that the issues raised had been dealt with in detail in that work and that the answers to most of the questions were to be found in the studies produced. Where there was a need to elaborate and complete the information according to the questions asked, additional information was provided and each subject was dealt with responsibly and in detail according to the guidelines and provisions of Romanian and European environmental legislation.

The provision for the preparation of an odour plan during the environmental permitting indicates that no thorough investigation and analysis of the potential substances to be emitted to the

ambient air, their concentrations, impacts and dispersion perimeter has been carried out at this time. Also, no specific preventive measures have been proposed to limit environmental pollution.

Answer:

The situations and the possibility of odours causing discomfort to the population, the working procedures (at all stages and phases of the work on the site) and the measures proposed to avoid such situations were analysed in detail. (pages: 29, 46, 183, 211, 212, 224, 254):

"the operator of the waste incineration plant is obliged to comply with internal procedures regarding the necessary precautionary measures for the delivery and reception of waste in order to prevent or limit, as far as possible, pollution of air, soil, surface water, groundwater and other negative effects on the environment, i.e. odours, noise and direct risks to human health".

"The wastewater treatment plant with a capacity of 417 l/h, type CN 2C is designed by DAIKI company from Japan and assembled by S.C. ASTEC ROMANIA S.R.L. The plant operates buried up to the manholes, in the vicinity of the sewage network capable of taking the flow of treated water, being designed for protection against very low temperatures but also against the emanation of unpleasant odours."

"With regard to a possible impact on the environment and on the population in the area caused by the possible presence of odours resulting from the incineration activity analysed, we make the following clarifications:

1. if all internal procedures related to the reception, temporary storage, handling and incineration of the waste analysed are followed, then no odours will be generated which would have a significant negative impact on the population
2. if animal waste is to be handled, the rules on its transport from the generator to the incinerator site shall be strictly observed and a cold room shall be used for its temporary storage until it is incinerated - in which case no odours shall be generated that would have a significant negative impact on the population".

" • for incineration plants, an accident management plan. The company will implement the necessary management techniques, i.e. draw up:

- Odour management plan
- Noise management plan
- Accident management plan

• for bottom ash treatment plants, management of diffuse dust emissions (see BAT 23) - not applicable

• an odour management plan if odour pollution is expected and/or proven to exist in sensitive areas (see section 2.4) - although this would not be the case because the site is in an area declared by the Giurgiu Local Council as an industrial area and the activity itself will not generate excessive odours the company will draw up such a plan".

With regard to the BAT techniques applicable to the installation for which the environmental assessment was carried out, which also result in the reduction of the possibility of generating odours leading to odour nuisance for the population in the vicinity of the site, the following clarifications were made:

	Technical	Description	Applicability
	Mixing and blending of waste	Procedures for mixing and blending waste prior to incineration include, for example, the following operations: • mixing with hopper cranes - not applicable • use of a power equalisation system - not applicable • mixing of compatible liquid and paste waste. In some cases, solid waste is shredded before mixing - a criterion that will only be met when appropriate	It will not apply if the furnace must be directly fed for safety reasons or because of the characteristics of the waste (e.g. infectious medical waste, smelly waste or waste that is likely to release volatile substances). It will not apply in situations where undesirable reactions may occur between different types of waste (see BAT 9 f).
	Advanced control system	The use of a computerised automatic control system to control combustion efficiency and support emission prevention and/or reduction. The use of high-performance monitoring of operating parameters and emissions is also included - full criterion met	Generally applicable The IR 1000-300 incinerator and the continuous monitoring system of the operating and combustion parameters with which it will be equipped fully meets this requirement.
	Optimising the incineration process	Optimization of waste feed rate, waste composition, temperature, and primary and secondary combustion air flow rates and injection points to effectively oxidize organic compounds while reducing NO_X - criterion fully met by the IR 1000-300 incinerator	Design optimisation will not apply to existing furnaces

The company complies with and will apply the provisions of the BATs for:

a) diffuse emissions

1. BAT 21. To prevent or reduce diffuse emissions from the incineration plant, including odour emissions, BAT consists of:

a) To store solid waste and viscous waste in bulk that is odorous and/or likely to release volatile substances in enclosed buildings under controlled subatmospheric pressure and use the extracted air as combustion air for incineration or send it to another appropriate abatement system in case of an explosion hazard - not applicable

b) To store liquid waste in tanks under appropriate controlled pressure and direct tank vents to the combustion air supply system or other suitable abatement system - not applicable

c) To control the risk of odour release during complete shutdown periods when no incineration capacity is available, e.g. by:

- sending the exhausted or extracted air to an alternative abatement system, e.g. wet scrubber, fixed adsorption bed - criterion met. The IE 1000R-300 incinerator is equipped with a dry gas scrubbing system
- minimising the amount of waste landfilled, e.g. by interrupting, reducing or transferring waste deliveries, as part of waste stream management (see BAT 9) - to be applied after obtaining the MA

- the storage of waste in properly sealed bales - a criterion to be met only where appropriate

2. BAT 22. In order to prevent diffuse emissions of volatile compounds caused by the handling of gaseous and liquid wastes that are odorous and/or likely to release volatile substances in incineration plants, BAT consists of direct feeding into the furnace. For gaseous and liquid wastes delivered in waste containers suitable for incineration (e.g. drums), direct feeding is achieved by placing the containers directly into the furnace - criterion to be met
   They may not be applicable to sewage sludge incineration, depending for example on the water content and the need for pre-drying or mixing with other wastes.

Technical	**Description**	**Applicability to S.C. Friendly Waste Romania S.R.L.**
Odour management plan	The odour management plan is part of the environmental management system (see BAT 1) and includes: (a) a protocol for carrying out odour monitoring in accordance with EN standards (e.g. dynamic olfactometry in accordance with EN 13725 to determine odour concentration); this may be supplemented by measurement/estimation of odour exposure (e.g. in accordance with EN 16841-1 or EN 16841-2) or estimation of odour impact; (b) a protocol for responding to identified incidents involving the release of odours, e.g. complaints; (c) an odour prevention and abatement programme designed to identify the source(s) of odours, characterise source contributions and implement prevention and/or abatement measures	They will be applied in the operational phase, after obtaining the MA

"Through the measures to protect the environmental factors mentioned in this study and in the study of the impact assessment on the health of the population, will result in emissions below the emission limit values, odours perceived strictly in the area of the incinerator site, the perimeter of the site will be made of trees and shrubs. The investment will not cause discomfort to the inhabitants of Drumul Cătunului Street.

Access to the objective, both during implementation and operation, will be from Slobozia Road, without affecting the population on the eastern side of the site through traffic noise and emissions of particulate matter and exhaust gases.

If animal waste is to be handled, the rules for transporting it from the generator to the incinerator must be strictly observed and a cold room must be used for temporary storage until it is incinerated, to avoid generating odours that could have a negative impact on the population."

Preventive measures to avoid and limit the risk of emergency are not presented.

Answer:

These measures and situations were presented in the Environmental Impact Report on pages 86, 87, 182.

Pages 86-87:

"In the event of a breakdown leading to an emergency shutdown of the incinerator (which is highly unlikely) the operating protocol will include the following phases:

1. when the incinerator stops suddenly (due to a malfunction) the LPG supply to the burners will automatically stop (process coordinated and controlled by the process computer-aided automation system). In this case the combustion process will also stop, which will stop the flue gas generation process.
2. the 2 combustion chambers are let to cool down
3. all flue gases that will be released before the combustion chambers cool down will pass through the gas scrubber and filter system and then be discharged into the atmosphere through the incinerator stack. The quantities of such gases will be very small and will have no impact on the environmental factor air
4. the cause of the stoppage is determined, the fault is identified and the technical measures to remedy the fault are determined. the combustion chambers (primary and/ or secondary) will only be opened if absolutely necessary. Taking into account the construction and operating principle of the incinerator, it is unlikely that a fault will occur inside one of the two combustion chambers that would lead to an abrupt shutdown of the incinerator.
5. after the fault has been rectified, the condition of the system and of the entire incinerator is checked by computer diagnosis, after which the incinerator is restarted in accordance with the start-up procedure in the technical book

For situations where incinerator malfunctions occur, they will be reported in advance by the automated monitoring system, in which case the procedural steps below apply:

1. the supply of waste to the primary chamber is stopped (continuous supply system)
2. the incineration process is completed for the entire quantity of waste in the primary combustion chamber
3. the LPG supply to the combustion system in the 2 chambers of the incinerator is switched off
4. the 2 chambers of the incinerator are let to cool down
5. the fault will be identified and the technical repair solution and working procedure will be determined
6. malfunction is rectified
7. the incinerator is restarted following the start-up procedure in the technical book

In this situation, no pollutants are emitted into the atmosphere at levels above those typical of normal operation."

"In the event of a fault in the electricity supply to the site, the following procedural steps are taken:

- automatically starts the electric generator
- the supply of waste to the primary combustion chamber is stopped
- the incineration of existing waste in the primary chamber will be completed
- the procedure for shutting down the incinerator is initiated
- the power grid is expected to come back on
- check the technical condition of the incinerator and restart it following the procedural steps in the technical book.

The running time of the generator will be limited by the time of completion of the incineration of the waste in the primary chamber at that time (with the waste supply switched off) after which it will stop waiting for the power supply to return from the grid. As such the amount of exhaust gas generated will be reduced. Combined with the minimum EURO 5 pollution level of the thermal engine with which the generating set will be equipped, the quantities of pollutants emitted into the

atmosphere during operation of the generating set will be very low and without significant negative impact on the environmental factor air."

At the same time, we would like to point out that the "*necessary set of preventive measures to ensure compliance with safety requirements and reduce the risk of accidents"* is further elaborated and analysed in the environmental permit procedure.

As a whole, both the EIA Report for the project and the responses to the comments do not address in depth and detail the various impacts on environmental components under possible adverse scenarios that may occur during incinerator operation. The overall impact resulting from normal operation of the plant is reviewed and is considered to be within acceptable limits, even below the accepted air emission limits. In this respect, the risk of disruption to the normal operation of the incinerator, i.e. its equipment and components, which may lead to disruption of the technological process and release of unregulated emissions, is determined to be minimal. Similarly , the risk of accepting waste of a different composition and quality than required, deficiencies in temporary storage, etc., which may lead to deviations in the process and in the type and amount of air emissions , has not been addressed in detail.

Answer:

1. Situation of possible adverse scenarios that may occur during incinerator operation

It was presented in the Environmental Impact Report that the plant will be equipped with a fully automated continuous emission concentration monitoring system for all pollutants required to be monitored. At the same time, it was stated that in the event of values outside the permissible ranges, the automation system will correct the technical parameters of the plant for any of the pollutants monitored and, if the values in question are not corrected within the permissible range, the plant will be shut down in order to detect and remedy the fault as follows:

Page 27:

"*Dry" flue gas cleaning/washing system*

This system includes:

a) - flue gas cooling system;

b) - the flue gas cleaning system, of the "dry absorbing system" type;

c) - dry particle filtration system;

d) - exhaust fan for exhausting combustion gases;

e) - flue gas chimney and chimney connection.

The flue gas is introduced in a controlled and directed way into the flue gas cleaning system, of the "dry absorbing system" type, in a reactor, specially dimensioned for this purpose, where the Solvay-Bicar mixture (NaHCO3 mixed with activated carbon) is injected through a nozzle. When it meets the flue gas with the sorbent in the powder phase in suspension and combines as the chemical reaction of pollutant absorption takes place, resulting in a powder which is then collected in the lower part of the reactor without the need for additional drying of the depollutant. The installation of such a system for the removal of pollutants from the flue gas by means of a dry absorbing system is designed and dimensioned to limit the discharge of pollutants and dust particles into the atmosphere in such a way as to comply with emissions into the atmosphere in accordance with the legislation in force (GD 128/2002, supplemented and updated with GD 268/2005).

In the event of abnormal operation of the gas flushing system which may lead to malfunctions, the electronic monitoring system will signal a potential malfunction in good time and the necessary remedial measures will be taken.

Following the flue gas cleaning system, the dry filter system and then the exhaust will be installed.

The dry particle filtering system is equipped with a bag filter.

Technical features are:

- filtered flow 5000 m /h^3
- filtered surface 360 m^2
- type of filter material filter bags made of FNS® (P84, glass fibre, PTFE)
- maximum operating temperature T max.(continuous) = 190 C^o
- pressure drop 50-150 mm H_2O.

The dry particle filtration system consists of a 144-bag filter, which is cleaned with counter-current air, resulting in a filtered air flow of 10000 m³/h. This flow rate is calculated to take up the load peaks that occur when the incineration process starts. At this point any volatile fractions in the waste to be incinerated ignite almost instantaneously and generate a volume of flue gas above the working flow rate of 5000 m^3 /h. The duration of the phenomenon is very short, in the order of 1 to 5 minutes, after which the normal working flow returns.

The life of a filter bag is 6000 hours after which it must be replaced.

Exhauster for flue gas exhaust

Technical characteristics for the flue gas exhaust are:

- centrifugal fan type T_{max} = 350^o C (with cooling fan) with electric motor
- Suction/discharge dimensions: Ø 406 mm / 355 x 250 mm.

The exhausters' system for the flue gas discharge consists of a centrifugal fan with cooling fan, which has a flow rate of 10000 m³/h. This flow rate has been dimensioned to take up the load peaks that occur at the start of the incineration process (see paragraph above)."

Pages 86-87:

"In the event of a breakdown leading to an emergency shutdown of the incinerator (which is highly unlikely) the operating protocol will include the following phases:

1. when the incinerator stops suddenly (due to a malfunction) the LPG supply to the burners will automatically stop (process coordinated and controlled by the process computer-aided automation system). In this case the combustion process will also stop, which will stop the flue gas generation process.
2. the 2 combustion chambers are let to cool down
3. all the flue gases that will still be released before the combustion chambers cool down will pass through the gas scrubber and filter system and then be discharged into the atmosphere through the incinerator stack. The quantities of such gases will be very small and without impact on the environmental factor air
4. the cause of the stoppage is determined, the fault is identified and the technical measures to remedy the fault are determined. the combustion chambers (primary and/ or secondary) will only be opened if absolutely necessary. Taking into account the construction and operating principle of the incinerator, it is unlikely that a fault will occur inside one of the two combustion chambers that would lead to an abrupt shutdown of the incinerator.
5. after the fault has been rectified, the condition of the system and of the entire incinerator is checked by computer diagnosis, after which the incinerator is restarted in accordance with the start-up procedure in the technical book

For situations where incinerator malfunctions occur, they will be reported in advance by the automated monitoring system, in which case the procedural steps below apply:

1. the supply of waste to the primary chamber is stopped (continuous supply system)
2. the incineration process is completed for the entire quantity of waste in the primary

combustion chamber

3. the LPG supply to the combustion system in the 2 chambers of the incinerator is switched off
4. the 2 chambers of the incinerator are let to cool
5. the fault will be identified and the technical repair solution and working procedure will be determined
6. malfunction is rectified
7. the incinerator is restarted following the start-up procedure in the technical book

In this situation, no pollutants are emitted into the atmosphere at levels above those typical of normal operation.

In the event of a fault in the electricity supply to the site, the following procedural steps shall be followed:

- the electric generator starts automatically
- the supply of waste to the primary combustion chamber is stopped
- the incineration of existing waste in the primary chamber will be completed
- the procedure for shutting down the incinerator is initiated
- the power grid is expected to come back on
- it is checked the technical condition of the incinerator and restarted following the procedural steps in the technical book.

The running time of the generator will be limited by the time of completion of the incineration of the waste in the primary chamber at that time (with the waste supply switched off) after which it will stop waiting for the power supply to return from the grid. As such the amount of exhaust gas generated will be reduced. Combined with the minimum EURO 5 pollution level of the thermal engine with which the generating set will be equipped, the quantities of pollutants emitted into the atmosphere during operation of the generating set will be very low and without significant negative impact on the environmental factor air."

Pages 178-180:

"Due to the fact that the incinerator is equipped with:

- secondary combustion chamber
- dry absorbing system" gas cleaning system
- bag filtration system

emission levels for different types of pollutants respectively:

- organic substances in the gaseous or vaporous state, expressed as total organic carbon (TOC)
- hydrofluoric acid (HF)
- hydrochloric acid (HCl)
- sulphur dioxide (SO_2)
- nitrogen dioxide (NO_2)
- total dust (TSP)
- dioxins and furans

is very low and below the maximum allowable limits. For the mathematical modelling of the dispersion of these pollutants in the atmosphere, the values in the incinerator technical book and in the literature[1] were used.

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[1] U.S. Environmental Protection Agency; Inciner8.com; NCBI - Waste Incineration & Public Health; Water, Sanitation and Health Protection of the Human Environment World Health Organization Geneva - Findings on an Assessment of Small-cale Incinerators for Health-care Waste

Table 1 - Maximum values of pollutants emitted into the atmosphere at the outlet of incinerators with secondary combustion chamber

Parameter	VLE	Maximum values measured at incinerators
Solid particle	10 mg/m³	1.2 mg/m³
Sulphur dioxide	50 mg/m³	2.4 mg/m³
Nitrogen Dioxide*	200 mg/m³	60 mg/m³
HCl	10 mg/m³	5.38 mg/m³
HF	1 mg/m³	0.04 mg/m³
TOC	10 mg/m³	4.6 mg/m³
CO		78.3 mg/m³

Concerning nitrogen oxides (NO_X):

Low NO_x burners are used to reduce NO_x emissions. It is estimated that the permissible emission limits will not be exceeded. According to Law 278/2013, Annex 6, the permitted limit value for NO_x for incinerators with a nominal capacity less than or equal to 6 tonnes per hour is 400 mg/ Nmc.

Concerning sulphur dioxide (SO_2):

Sulphur oxide emissions are mainly caused by the presence of sulphur in the fuel... Therefore, the use of gaseous fuel will result in insignificant SO2 emissions. (According to Law 278/2013, Annex 6, the permissible limit value for sulphur dioxide at waste incinerators is 50 mg/Nmc for the reference value of 3% O_2);

Regarding powders: It is estimated that the combustion of purified gas is not a significant source of dust emissions. According to Law 278/2013, Annex 6, the permissible limit value for dust at waste incinerators is 30 mg/Nmc (100% A) or 10 mg/Nmc (97% B) - average emission limit values for half an hour.

The total dust concentration of the air emissions of the incinerator shall in no case exceed 150 mg/Nm³ , expressed as a half-hour average.

Concerning carbon monoxide (CO):

Carbon monoxide always occurs as an intermediate product of the combustion process, especially under substoichiometric combustion conditions. The reduction of CO concentrations resulting from the combustion process will be achieved by combustion control and monitoring.

After commissioning, emissions at the flue gas stack will be monitored to verify the evaluated data and compliance with the limits allowed by Law 278/2013. The limits will be complied with (except for the start-up and shut-down phase):

- 50 mg/Nm³ in combustion gas determined as average daily value;
- 100 mg/Nm³ in combustion gas from all measurements (determined as half-hourly averages taken over 24 hours);
- 150 mg/Nm³ in the combustion gas in at least 95% of all measurements (determined as 10-minute averages).

To assess values:

1. average values in half an hour for pollutants:
   - organic substances in the gaseous or vaporous state, expressed as total organic carbon (TOC)
   - hydrofluoric acid (HF)
   - hydrochloric acid (HCl)
2. daily average values for pollutants:
   - organic substances in the gaseous or vaporous state, expressed as total organic carbon (TOC)
   - hydrofluoric acid (HF)
   - hydrochloric acid (HCl)
   - sulphur dioxide (SO_2)
   - nitrogen dioxide (NO_2)
   - total dust (TSP)
3. average values over a sampling period of minimum 6 hours and maximum 8 hours for pollutants:
   - dioxins and furans

measurements will be carried out during the operation of the incinerator, as no information other than that in the technical books of the equipment is available at this time and that the values indicated in L 278/2013, point 1.4, part a-3-a, Annex 6, respectively, must not be exceeded:

Table 2 - Half-hourly average emission limit values (mg/Nmc)

Pollutant	(100%) A	(97%) B
Total dust	30	10
Organic substances in the gaseous or vaporous state, expressed as carbon total organic (TOC)	20	10
Hydrochloric acid (HCl)	60	10
Hydrofluoric acid (HF)	4	2
Sulphur dioxide (SO_2)	200	50
Nitrogen monoxide (NO) and nitrogen dioxide NO_2 expressed as NO_2 for existing waste incineration plants with a nominal capacity exceeding 6 tonnes per hour or for new waste incineration plants	400	200

Table 3 - Average daily emission limit values

Pollutant	(mg/Nmc)
Total dust	10
Organic substances in the gaseous or vaporous state, expressed as carbon total organic (TOC)	10
Hydrochloric acid (HCl)	10
Hydrofluoric acid (HF)	1
Sulphur dioxide (SO)$_2$	50
Nitrogen monoxide (NO) and nitrogen dioxide NO_2 expressed as NO_2 for existing waste incineration plants with a nominal capacity exceeding 6 tonnes per hour or for new waste incineration plants	200
Nitrogen monoxide (NO) and nitrogen dioxide NO_2 expressed as NO_2 for existing waste incineration plants with a nominal capacity of less than 6 tonnes per hour	400

2. *The risk of accepting waste of a different composition and quality than required, deficiencies in temporary storage, etc., which may lead to deviations in the process and in the type and amount of air emissions*

All the necessary measures to be applied at the reception of waste on site are described, in accordance with Romanian legal provisions, on pages 29, 33

Page 29:

"*Technology flow for the incineration of non-hazardous and non-hazardous animal waste*

1. Waste reception
   - on arrival of the means of transport at the site, the accompanying documents are checked as described above
   - waste is weighed
   - the input register is completed for the type of waste received
   - no sampling of waste is required
2. Unloading of waste - this is done with a forklift. Waste bins are taken from the means of transport and temporarily stored on the concrete platform intended for this purpose. This platform is partially covered with a lightweight canopy.
3. Waste storage
   - if the non-hazardous waste does not enter the incineration stream directly, it is temporarily stored on the concrete platform specially designed for this purpose. This platform is located at the entrance to the site and has S = 35 sqm and a capacity of approx. 10 t (taking into account the storage matrix requiring access space and the relative density of the waste). Temporary storage will not exceed 24 - 48 hours.
   - If the waste is of animal origin (perishable), it is temporarily stored in cold room no. 1 with a storage capacity of 16 cubic metres (approx. 10 t taking into account the storage matrix which requires access space and the relative density of the waste). Animal waste that is packaged is only partially subjected to a tertiary or secondary packaging removal process if possible. This process takes place in the technical room

located on the concrete platform next to the waste reception platform. The packaging waste resulting from this process is sorted and then deposited, by category for recycling, in the area designated for selective waste collection, i.e. on the concrete platform in front of the technical room.

4. From the unloading and/or temporary storage area the waste containers are taken by the transport machine to the incinerator area. Here the containers are unloaded into the continuous feed system of the incinerator. After unloading, the empty containers are taken to the sanitation area, i.e. the concrete platform with S = 42 m² for sanitising/disinfecting both the means of transport and the containers used to transport the waste.

From here, the sanitised containers are moved to the area at the end of the platform where they are loaded onto transport vehicles that will take them to the waste collection points from the generators."

Page 33:

" Technology flow for medical waste incineration

1. Waste reception
   - on arrival of the means of transport at the site, the accompanying documents are checked
   - waste is weighed
   - the input register is completed for the type of waste received
   - sampling of medical waste is neither required nor permitted
2. Unloading the waste - this is done with a forklift or manually if it is not too heavy. The waste bins are taken from the means of transport and temporarily stored on the concrete platform in the area specially designated for this purpose. This platform is partially covered with a light canopy.
3. Waste storage - for the situation where medical waste does not go directly into the incineration stream it is temporarily stored in cold room 2. Temporary storage is carried out for a maximum of 24 - 48 hours until the incinerator is released.
4. from the unloading and/or temporary storage area the waste containers are taken by the transport machine to the incinerator area. Here the containers are unloaded into the continuous feed system of the incinerator. After unloading, the empty containers are taken to the disinfection area, i.e. the concrete platform with S = 42 m² for both sanitising/disinfecting the means of transport and the containers used to transport the waste.

From here, the disinfected containers are moved to the area at the end of the platform where they are loaded onto transport vehicles that will take them to the waste collection points from the generators.

The following clarifications are made in relation to the packaging in which medical waste is brought:

1. for hazardous medical waste - this is brought in special bags or boxes and incinerated together with the packaging in which it is brought
2. for non-hazardous medical waste:

- if it is brought in special bags for this type of waste, it is incinerated together with the packaging in which it is brought
- if they are brought in special bags placed in the bins for these types of waste, then the bins are disinfected in the area specially set aside for this process (the same area is also used for disinfecting the means of transport) located on the concrete platform at the entrance to the site, which is equipped with all the means necessary for this purpose. Disinfection is carried out with Biclosol solution, using hot water pressure washers of the Kracher type or other brands."

5. how the waste reception operations at the site will comply with BAT is described on pages 217-218

"BAT 11 provisions - To improve the overall environmental performance of the incineration plant, BAT consists of monitoring waste deliveries as part of the waste acceptance procedures (as per BAT 9 c), including, depending on the risk posed by the incoming waste, the items in the table below:

Table 4 - Monitoring elements at waste reception

Type of waste	Monitoring waste deliveries
Municipal solid waste - not applicable Other non-hazardous waste	Radioactivity detection - not applicable Weighing of waste deliveries - criterion to be met Visual inspection - criterion to be met Regular sampling of waste deliveries and analysis of key properties/ substances (e.g. calorific value, halogen and metal/metalloid content) - criterion to be met only where appropriate
Sewage sludge	Weighing of waste deliveries (or flow measurement if sewage sludge is delivered by pipeline) - not applicable Visual inspection, as far as technically feasible - criterion to be met only if applicable Regular sampling and analysis of key properties/substances (e.g. calorific value, water, ash and mercury content) - criterion to be met only where appropriate
Hazardous waste other than medical waste	Detection of radioactivity - criterion met only when appropriate Weighing of waste deliveries - criterion met Visual inspection, as far as technically possible Control of each delivery of waste and its comparison with the waste producer's declaration - not applicable Sampling from: ○ all tankers and trailers - not applicable ○ packaged waste (e.g. in drums, intermediate bulk containers (IBCs) or smaller packaging) and analysis - to be met only when appropriate ○ combustion parameters (including calorific value and flash point) - criterion to be met only when appropriate ○ compatibility of waste to detect possible hazardous reactions during mixing or blending of waste prior to landfilling (BAT 9f) - criterion to be met ○ key substances, including POPs, halogens and sulphur, metals/ metalloids - criterion to be met only where appropriate
Medical waste	Detection of radioactivity - criterion to be met only when appropriate Weighing of waste deliveries - criterion to be met Visual inspection of packaging integrity - criterion to be met

Provisions BAT 12 - To reduce the environmental risks associated with the reception, handling and storage of waste, BAT consists of using both of the techniques listed below:

Table 5 - Techniques applied to reduce environmental risks associated with waste reception, handling and storage

	Technical	Description
	Impermeable surfaces with adequate drainage infrastructure	○ Depending on the risks posed by the waste in terms of soil or water contamination, the surface of the waste reception, handling and storage areas shall be made impermeable to the target liquids and equipped with an appropriate drainage infrastructure (according to BAT 32) - criterion to be met - these activities shall be carried out on a concrete pad equipped with a waterproofing membrane before pouring. ○ The integrity of this surface shall be checked regularly, as far as technically possible - a criterion which shall be met
	Adequate waste storage capacity	Measures are taken to avoid the accumulation of this waste: ○ clear determination and not exceeding of the maximum waste storage capacity, taking into account the characteristics of the waste (e.g. in terms of fire risk) and the treatment capacity - criterion to be met ○ regular monitoring of the amount of waste landfilled in relation to the maximum permitted landfill capacity - criterion to be met ○ for waste that is not mixed during storage (e.g. medical waste, packaged waste), the maximum residence time is clearly defined - criterion to be met

Given that the only hazardous waste to be treated on site is medical waste, according to Romanian legislation, it will be handled and incinerated in special collection containers without being allowed to be opened and, as such, it will be impossible to "*sample, inspect and analyse the waste before acceptance for incineration"*.

Regarding the possibility of "*temporary storage deficiencies"* occurring on the site, this is totally excluded because:

- there will be clear procedures on site regarding the temporary storage of waste and its handling/manoeuvring
- both technical and labour staff will be regularly trained and checked monthly on their knowledge and application of the procedures for temporary storage of all categories of waste
- daily the shift manager will check the training of staff and the application of the respective procedures on site

All these aspects are specific to the permitting and then the operation of the installation.

No alternatives were considered, no alternatives to the selected technology were found that were justified on the basis of a satisfactory environmental analysis of the activity.

Answer:

The presentation of the procedures set out in the Romanian legislation and in the applicable guidelines, the analysis of the alternatives and the choice of the alternative for the implementation of the project on the analysed site have been presented very clearly and relevantly in Chapter 3 of the MIR, on page 58.

The environmental authorities in Romania (Ministry of Environment, National Agency for Environmental Protection and Giurgiu Environmental Protection Agency), which are represented by highly qualified specialists and professionals, have analysed the documents drawn up and have strictly complied with the provisions of Law 86/2000 for the ratification of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, signed in Aarhus on 25 June 1998.

As regards the choice of a technology other than incineration for hazardous medical waste, it is not possible because these are hazardous materials which cannot be neutralised otherwise and which, if not incinerated, would pose a great danger to public health.

According to the good practice guide "Medical waste - legal requirements and good practices" developed in 2021 by the MINISTRY OF HEALTH - NATIONAL INSTITUTE OF PUBLIC HEALTH, NATIONAL CENTRE FOR MONITORING OF RISKS IN THE COMMUNITY ENVIRONMENT, it is specified regarding the incineration of medical waste:

"4.5 Methods of disposal of medical waste

Medical waste disposal methods

4.5.1 Incineration in zonal hazardous waste incinerators for hazardous waste from medical activities".

"Waste incineration is a thermal process that takes place at high temperatures. Waste incineration is one of the most technically efficient methods of disposing of medical waste under optimal conditions, as long as incinerators are equipped with efficient automatic systems for filtering, neutralising and monitoring the compounds resulting from the combustion process. All types of incinerators, if operated correctly, remove pathogens from the waste and reduce the volume of waste to ash. Medical waste, e.g. pharmaceutical or chemical waste, requires higher temperatures for complete destruction."

"Waste accepted for incineration:

- 18 01 01 (18 01 03*)- pungent/cutting waste
- 18 01 02 (18 01 03*) - anatomical pathological waste and parts, blood vessels and blood
- 18 01 03* - infectious wastes
- 18 01 04 - non-hazardous waste not subject to special infection prevention measures
- 18 01 06* - chemical wastes consisting of or containing dangerous substances
- 18 01 07 - chemical wastes other than those mentioned in 18 01 06*
- 18 01 07 - chemical wastes other than those mentioned in 18 01 06
- 18 01 08* - waste cytotoxic and cytostatic medicines
- 18 01 09 - waste medicines other than those mentioned in 18 01 08*."

The incinerator to be used complies fully with all these provisions. This has been analysed in detail in all the relevant chapters of the Environmental Impact Report.

By the above notification, we are requesting information on the likelihood and situations associated with the release and spread of odours with the potential to cause odour nuisance, the type of potentially odorous substances and the conditions that could favour their spread, including under emergency conditions, proposing a plan with additional measures to ensure their resolution as soon as possible. The contractor states that these issues have been addressed in the report, again referring only to the information contained in the report. The latter refers to an inventory of the entire procedure for the reception, unloading, temporary storage, treatment and incineration of waste (non-hazardous, non-hazardous animal waste, medical waste and its packaging), but not to an analysis of possible sources of odours from it. The requirement is set for airborne odours emitted from both organised and non-organised sources. An odour management plan will be drawn up, as required by the Contracting Authority, at the start of the activity. For the purposes of this assessment, it is necessary to identify and analyse the most appropriate odour mitigation and abatement techniques that the Contracting Authority will apply to the specific activity on site and to distinguish their sources (point/diffuse), in addition, the Contracting Authority states that "excessive odours" will not be generated by the activity and it is not clear how these have been assessed as such.

Answer

1. On site, during the implementation phase of the project, there will be no situations or sources generating odours
2. As regards the management of odours potentially generated on the site during the operation of the plant, this will be regulated by an environmental permit to be issued after completion of the investment. Even so, the Environmental Impact Report has analysed potential situations that could generate odours and has proposed measures and outlined proposed procedures to prevent the occurrence of such situations.

These issues were analysed in the Environmental Impact Report as follows:

1. The working procedures for the entire waste stream (reception, unloading, temporary storage, handling and incineration) for all waste categories were described in detail (including logical flow diagrams) as follows:

- on page 29 - The technology flow for the incineration of non-hazardous and non-hazardous animal waste:

A) Technology flow for the incineration of non-hazardous and non-hazardous animal waste

1. Waste reception
   - on arrival of the means of transport at the site, the accompanying documents are checked as described above
   - waste is weighed
   - the input register is completed for the type of waste received
   - no sampling of waste is required
2. Unloading of waste - this is done with a forklift. Waste bins are taken from the means of transport and temporarily stored on the concrete platform intended for this purpose. This platform is partially covered with a lightweight canopy.
3. Waste storage
   - if the non-hazardous waste does not enter the incineration stream directly, it is temporarily stored on the concrete platform specially designed for this purpose. This platform is located at the entrance to the site and has S = 35 sqm and a capacity of approx. 10 t (taking into account the storage matrix requiring access space and the relative density of the waste). Temporary storage will not exceed 24 - 48 hours.
   - If the waste is of animal origin (perishable), it is temporarily stored in cold room no. 1 with a storage capacity of 16 cubic metres (approx. 10 t taking into account the storage matrix which requires access space and the relative density of the waste). Animal waste that is packaged is only partially subjected to a tertiary or secondary packaging removal process if possible. This process takes place in the technical room located on the concrete platform next to the waste reception platform. The packaging waste resulting from this process is sorted and then deposited, by category for recycling, in the area designated for selective waste collection, i.e. on the concrete platform in front of the technical room.
4. From the unloading and/or temporary storage area the waste containers are taken by the transport machine to the incinerator area. Here the containers are unloaded into the continuous feed system of the incinerator. After unloading, the empty containers are taken to the sanitation area, i.e. the concrete platform with S = 42 m² for sanitising/disinfecting both the means of transport and the containers used to transport the waste.

From here, the sanitised containers are moved to the area at the end of the platform where they are loaded onto the transport vehicles that will take them to the waste collection points from the generators.

At least at this stage, no means of reducing the volume of packaging resulting from the unpacking of waste arriving at the site will be used. If the need for such an operation is identified at a

later stage, such equipment will be purchased and installed, in compliance with the environmental procedures for both the implementation and the operational phase.

The technological flows for the incineration of non-hazardous waste and animal waste are shown below (Figures 10 and 11):

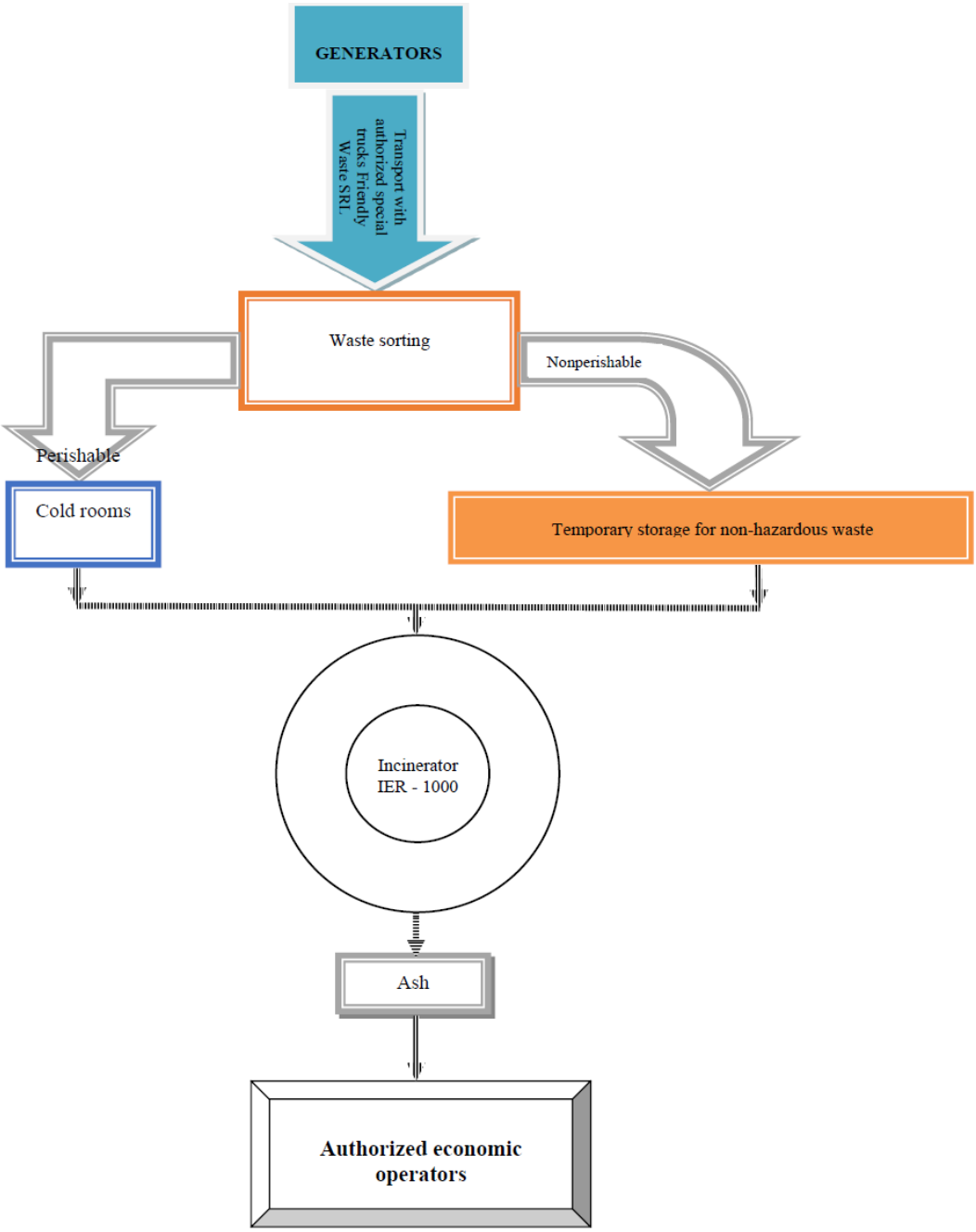


Figure 10 – Waste flow

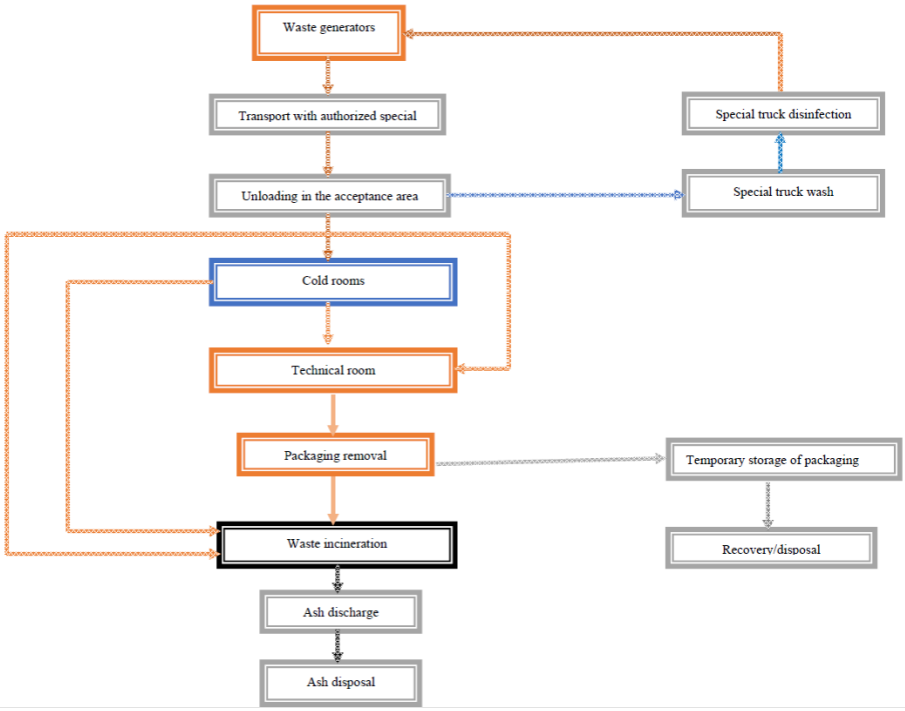


Figure 11 – The flow of non-hazardous animal waste

- on page 33 – Technology flow for medical waste incineration:

B) *<u>Technology flow for medical waste incineration</u>*

1. Waste reception
   - on arrival of the means of transport at the site, the accompanying documents are checked
   - waste is weighed
   - the input register is completed for the type of waste received
   - sampling of medical waste is neither required nor permitted
2. Unloading the waste – this is done with a forklift or manually if it is not too heavy. The waste bins are taken from the means of transport and temporarily stored on the concrete platform in the area specially designated for this purpose. This platform is partially covered with a light canopy.
3. Waste storage – for the situation where medical waste does not go directly into the incineration stream it is temporarily stored in cold room 2. Temporary storage is carried out for a maximum of 24 – 48 hours until the incinerator is released.
4. from the unloading and/or temporary storage area the waste containers are taken by the transport machine to the incinerator area. Here the containers are unloaded into the continuous feed system of the incinerator. After unloading, the empty containers are taken to the disinfection area, i.e. the concrete platform with S = 42 m² for both sanitising/disinfecting the means of transport and the containers used to transport the waste.

From here, the disinfected containers are moved to the area at the end of the platform where they are loaded onto transport vehicles that will take them to the waste collection points from the generators.

The following clarifications are made in relation to the packaging in which medical waste is brought:

3. for hazardous medical waste – this is brought in special bags or boxes and incinerated together with the packaging in which it is brought
4. for non-hazardous medical waste:

- if it is brought in special bags for this type of waste, it is incinerated together with the packaging in which it is brought
- if they are brought in special bags placed in the bins for these types of waste, then the bins are disinfected in the area specially set aside for this process (the same area is also used for disinfecting the means of transport) located on the concrete platform at the entrance to the site, which is equipped with all the means necessary for this purpose. Disinfection is carried out with Biclosol solution, using hot water pressure washers of the Kracher type or other brands.

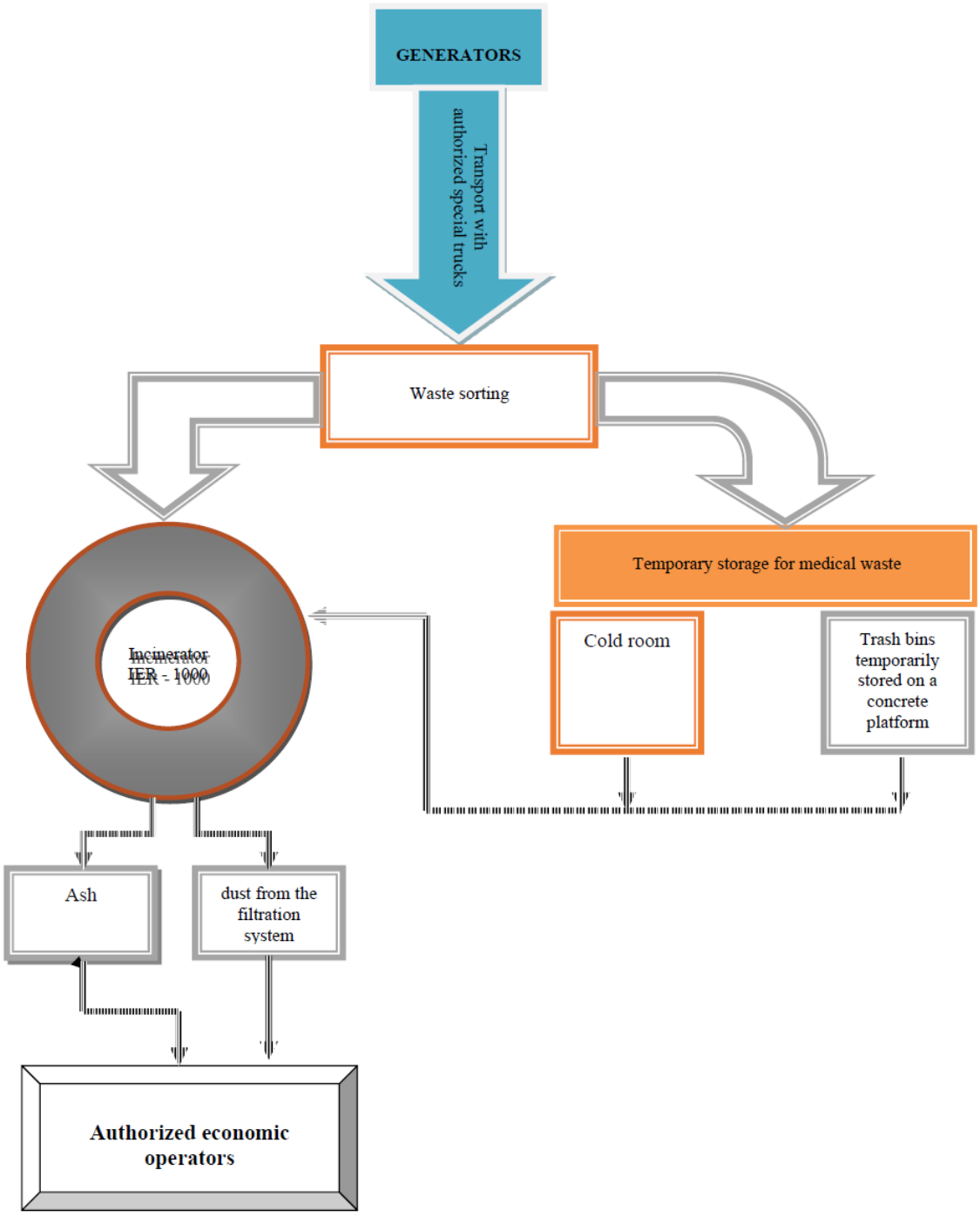


Figure 12 – Medical waste flow

- on page 38 - the procedures for implementing the provisions of the Order of the President of ANSVSA No 16/2010 approving the Sanitary Veterinary Standard on the procedure for registration/veterinary health authorisation of establishments/ collection centres/holdings of origin and means of transport in the field of animal health and welfare, as amended and supplemented:

"The transport of waste will be carried out in compliance with the provisions of Government Decision no. 1076/2008 on the transport of hazardous and non-hazardous waste in Romania.

Non-hazardous animal waste (animal by-products and derived products not intended for human consumption of categories 1, 2 and 3 categorised in accordance with Regulation (EC) No 1069/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 laying down health rules concerning animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 853/2004 of the European Parliament and of the Council of 22 December 2004 laying down health rules concerning animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 853/2004 of the European Parliament and of the Council of 22 December 2004 laying down health rules concerning animal by-products and derived products not intended for human consumption) is not covered by this Regulation. 1774/2002), will be collected from generators and keepers in special containers in accordance with the provisions of the Order of the President of ANSVSA No 16/2010 approving the Sanitary Veterinary Standard on the procedure for registration/veterinary approval of establishments/collection centres/holdings of origin and means of transport in the field of animal health and welfare, as amended and supplemented (240 - 1100 l bins) and transported by the vehicles provided.

The transport of hazardous waste to be incinerated will be carried out with the trucks provided, after their authorization by the ADR, or with authorized trucks of third parties (companies authorized to collect waste of the category to be incinerated on the analysed site)".

The additional information provided on hazardous chemicals and mixtures only answers the question on diesel use and storage, but does not provide information on the composition of the disinfectant to be used for the company's needs. Biclosol disinfectant will be used for disinfecting medical waste packaging that needs to be disinfected and will be stored in an area dedicated to this process. Disinfection will be carried out with a prepared solution and hot water washing equipment. A Safety Data Sheet must be attached. Deliveries of hazardous chemical substances and mixtures (fuels and disinfectants) must be accompanied by up-to-date Safety Data Sheets as required by Regulation (EC) 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals, as amended. Given that dangerous chemical substances and mixtures falling within the scope of Part 1 and Part 2 of Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances and amending and subsequently repealing Council Directive 96/82/EC will be stored at the site, and in relation to the requirements of Article 7 of the same Directive, it is necessary for the operator to prepare a notification. The notification must address possible emergency situations that may arise in the event of a failure of the installation, leakage or spillage from tanks.

Answer

All these requirements are specific to the operational phase of the objective under consideration and will be included in the provisions of the environmental permit.

All the safety data sheets for each chemical to be used will certainly be on site.

At the same time, the notification referred to must also be drawn up at the operational stage.

The Contracting Authority has not indicated how it reached the conclusion mentioned on page 221 of the submitted Environmental Impact Report - "The project proposed by Friendly Waste Romania SRL does not comply with the provisions of the SEVESO Directive, transposed into national legislation by Law no. 59/2016 on the control of major accident hazards involving dangerous substances" - there is no specific justification and it is not clear on what basis the conclusion was made. A justification for this conclusion should be provided and quantitative parameters should be presented.

Answer:

Law No 59/2016 on the control of major-accident hazards involving dangerous substances, which transposes the SEVESO Directive, clearly specifies the substances, mixtures of substances and all the conditions that must be met by an establishment in order for it to fall into the categories set out in this Directive (establishment with minor risk or establishment with major risk of a major accident involving dangerous substances).

The substances and wastes and their quantities that will be present on the site at any given time are not covered either by Annex 1 (nor by Note 4 to Annex 1 - "4. Rules governing the aggregation of dangerous substances or categories of dangerous substances shall apply, where applicable ...) nor in Annex 2 to the Act (Annexes setting out the criteria for the classification of an establishment under the Act).

It is not clear which installations, activities and machinery on the site would emit noise into the environment. It states that sources would be transport vehicles, machinery and an incinerator, without specifying what is included here. No estimate of the expected construction and operational sound power levels from the facility was provided. A value is given for the expected noise at the "Impact Location" (Drumul Cătunului Street with a distance of 535 m from the construction site) and during the operation of the incinerator, but no methodologies, formulas and/or calculation procedures are provided to arrive at the determined values of the equivalent noise level. It is not clear whether and how environmental noise emissions will be controlled during normal operation of the plant. In the replies referred to in the interministerial correspondence it is stated that "we can estimate that the noise level will not exceed at the property boundary the maximum value allowed by the Order of the Minister of Health No 119/2014", a statement that is not supported by measurable, real and demonstrable data.

Answer

A. Project implementation phase

The noise sources that will be present on site at this stage and the noise levels generated by them are shown in the table below:

Source	Source representation code	Number of vehicles/ vehicles present on the site at the same time	Total operating hours / day on site	Maximum sound pressure* Lw(dBA)

Crane	SG1	1	1	90
Excavator	SG2	1	6	95
TIR material transport	SG3	1	16	95
Motorbike	SG4	1	8	65
Machines for staff participating in the works	SG5	2	4	65

The worst-case situation in which all sources present on the site are assumed to operate simultaneously and at maximum noise level is considered.

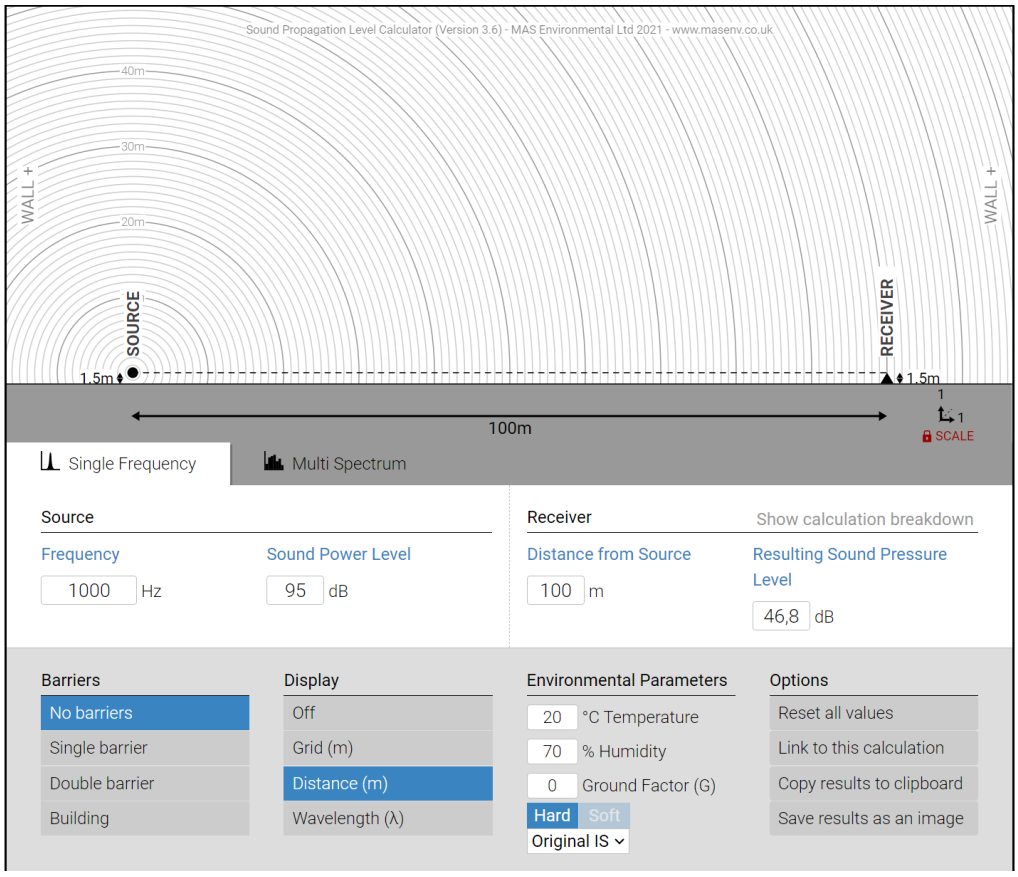
Noise levels at a certain distance from the construction site were determined using:

a. "Sound Propagation Level Calculator" software
b. noise maps have been produced by mathematical modelling

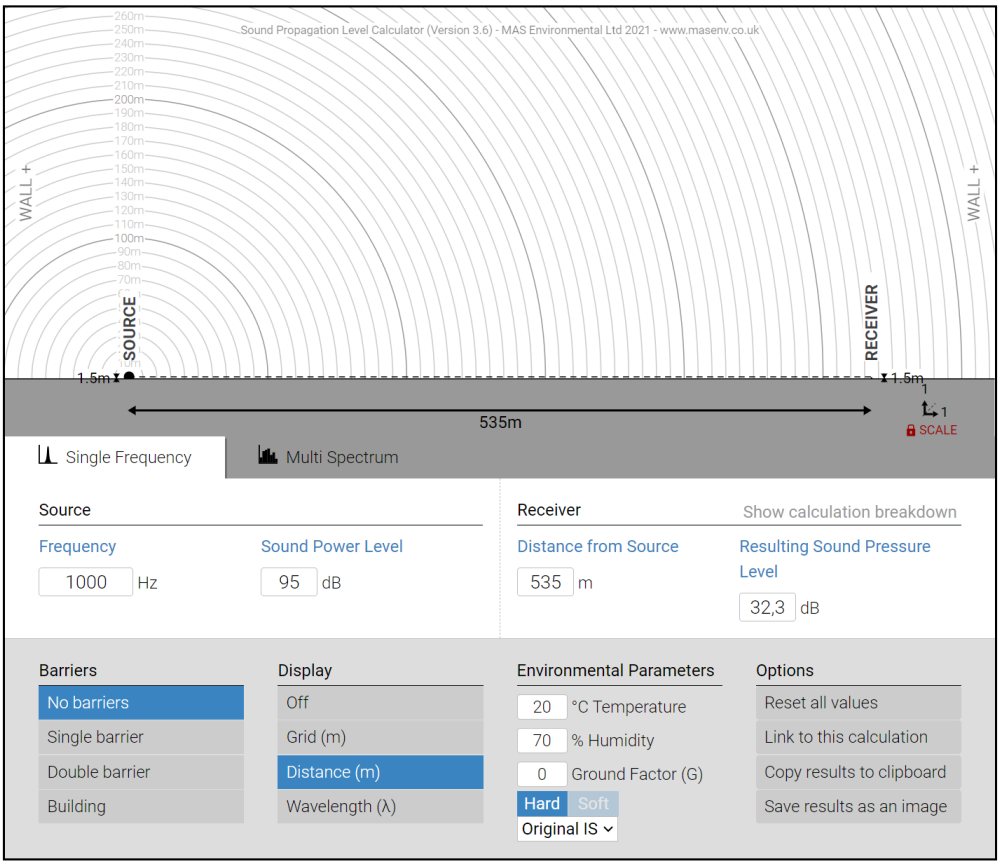
The determination of the noise level was carried out under the worst-case assumption that the noise sources are located in an open field with no barriers or elements to absorb and/or attenuate the propagated noise level. The results are presented below:

- "Sound Propagation Level Calculator" software

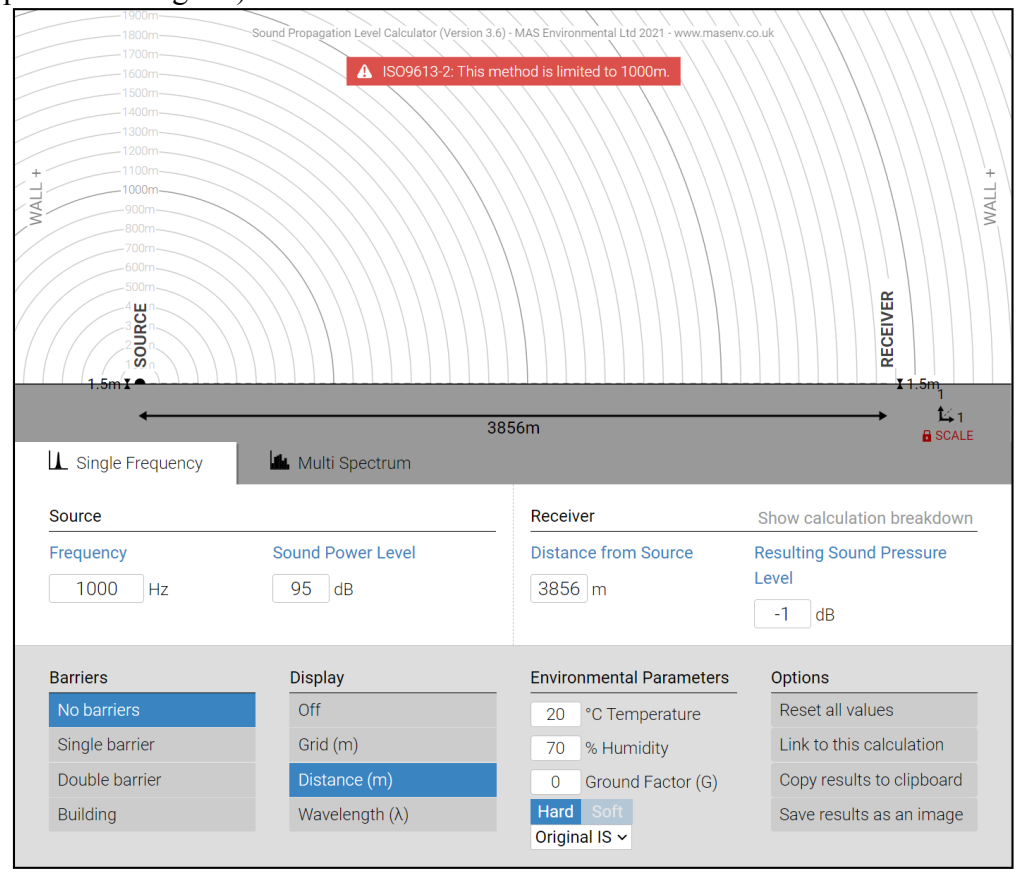
- the maximum noise level recorded at a distance of 100 m from the site is 46,8dB



- the noise level recorded at a distance of 535 m from the site (Drumul Cătunului) is 32,3 dB



- noise level recorded at a distance of 3856 m from the site (position of the border with the Republic of Bulgaria)



According to this software and the ISO9613-2 method the noise level at the border of Romania with the Republic of Bulgaria is undetectable (the software gives negative values), even more so at the border of Ruse

- noise maps

A. Project implementation phase

The noise barriers that will be active during the implementation phase of the project will be represented by the machinery and vehicles involved in those works.

The noise sources that will be present on the site under consideration at this stage and the noise levels generated by them are shown in the table below:

Table 6 Noise sources for the implementation phase of the project

Vehicle type	Source representation code	Number of vehicles/ machines present on the site at the same time	Total operating hours / day on site	Maximum sound pressure* Lw(dBA)
Crane	SG1	1	1	95
Excavator	SG2	1	6	95
TIR material transport	SG3	1	16	95
Motorbike	SG4	1	8	75
Machines for staff participating in the works	SG5	2	4	65

The noise maps generated by mathematical modelling as well as the noise levels recorded at the nearest sensitive receivers are shown below:

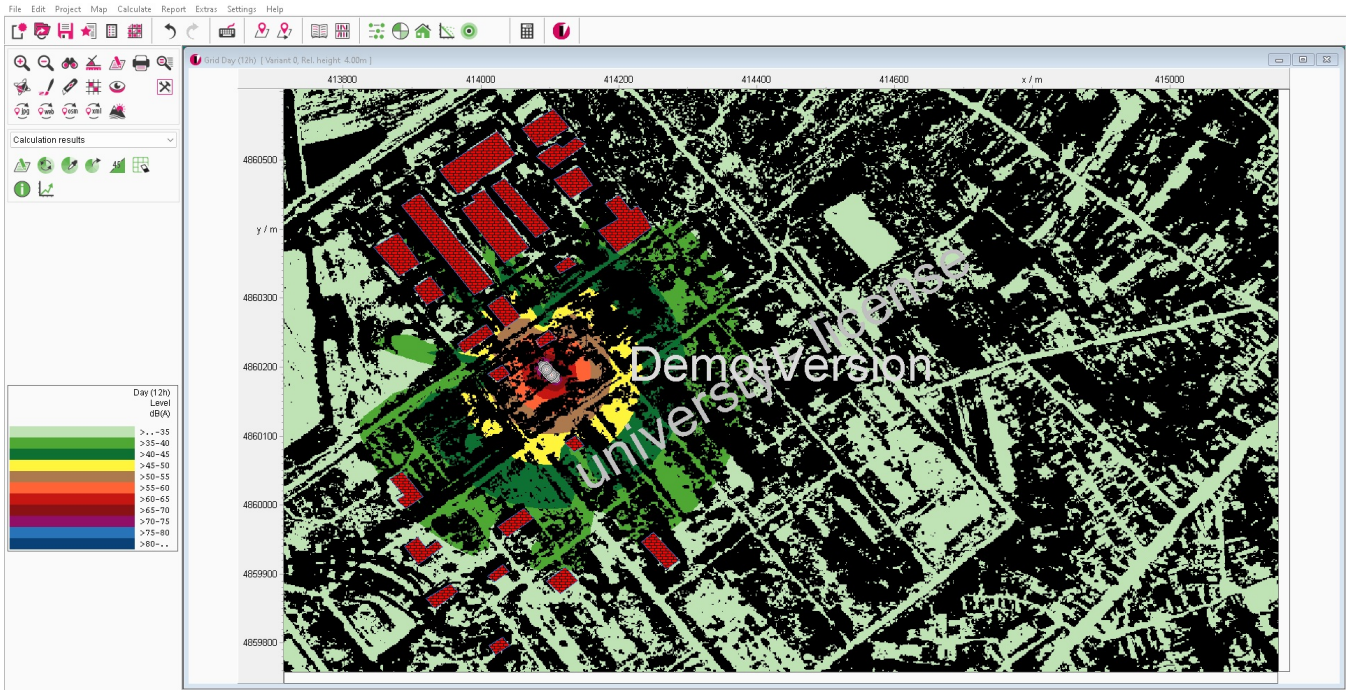


Figure 1: noise map - project implementation phase

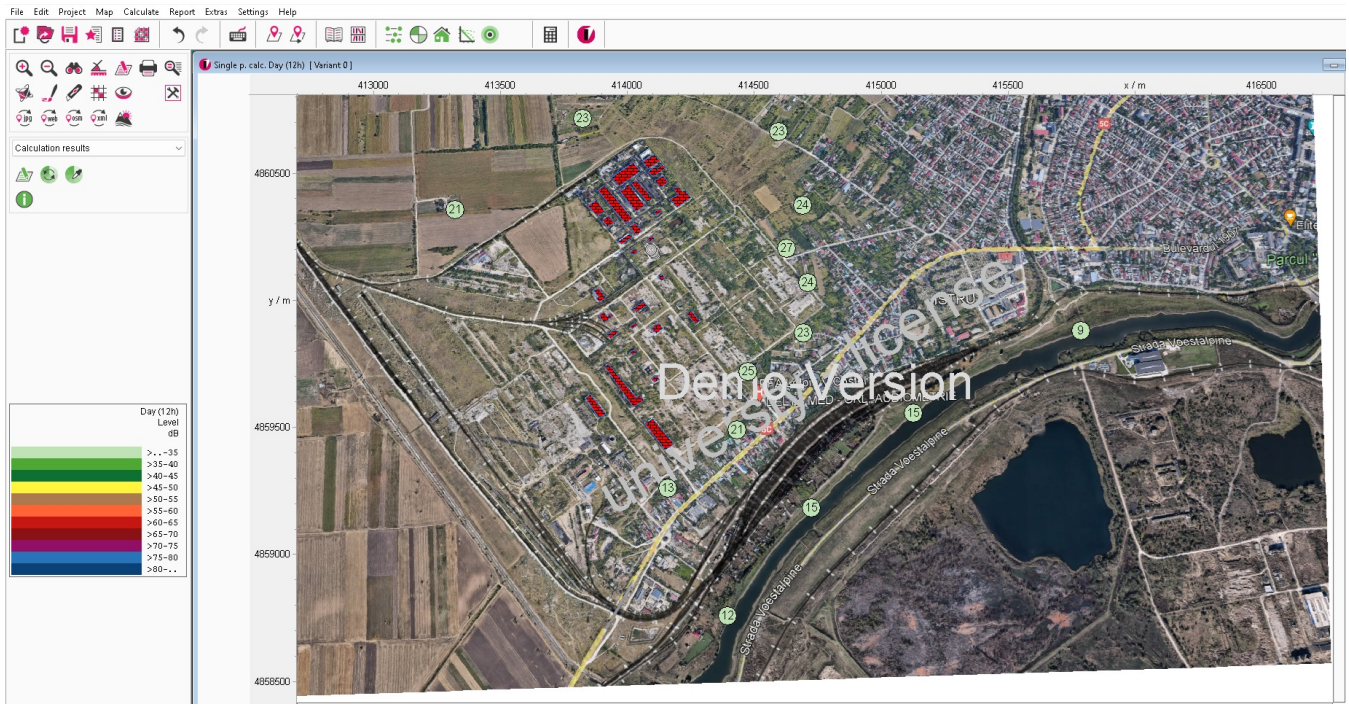


Figure 2Noise levels recorded at the boundary of the nearest sensitive receptors and at the border between Romania and the Republic of Bulgaria during the project implementation phase

According to these mathematical models, the maximum noise level that can be recorded on the Romanian side of the Danube will be a maximum of 15 dB(A), i.e. well below the day/night limits laid down in Romanian and European legislation.

B. Operational stage

Source	Source representation code	Number of vehicles/ machines present on the site at the same time	Maximum sound pressure* Lw(dBA)
Incinerator	SG1	1	45-50
Motorbike	SG2	1	65
Machines for staff participating in the works	SG3	2	65

1. noise mapping through mathematical modelling:

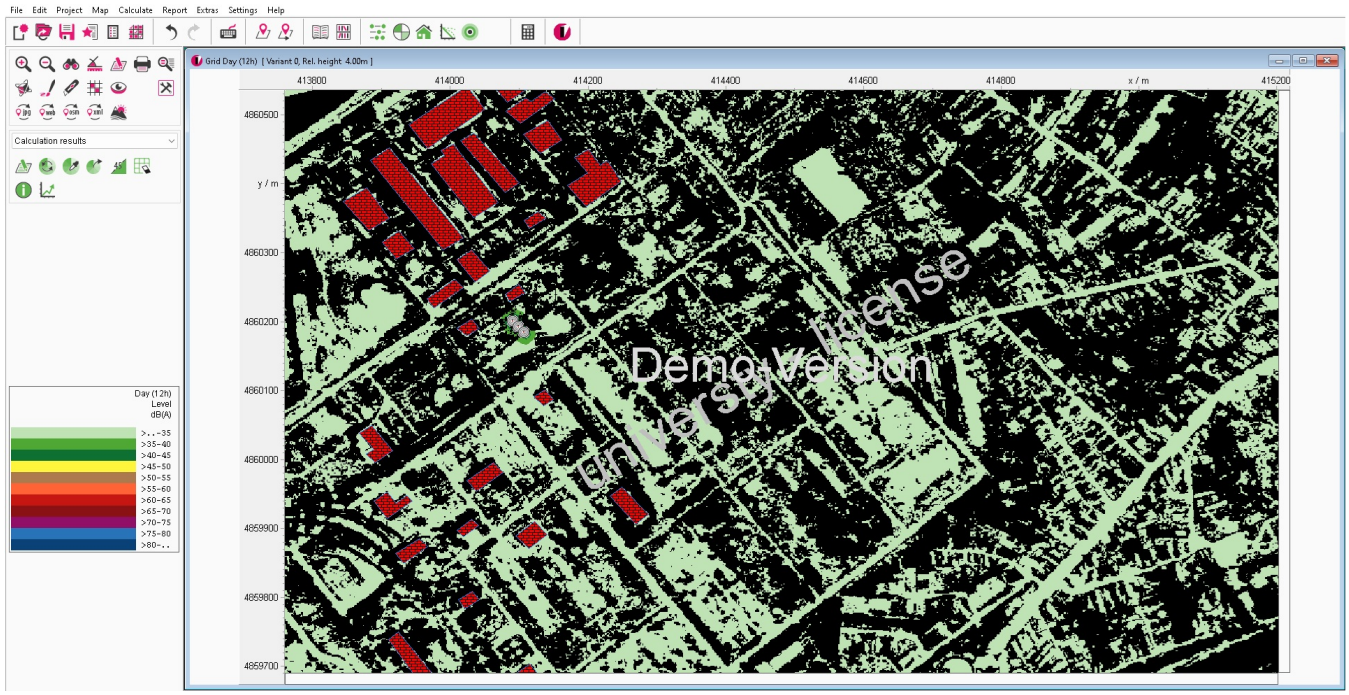


Figure 3: Mathematical modelling of noise levels for the incinerator operating stage

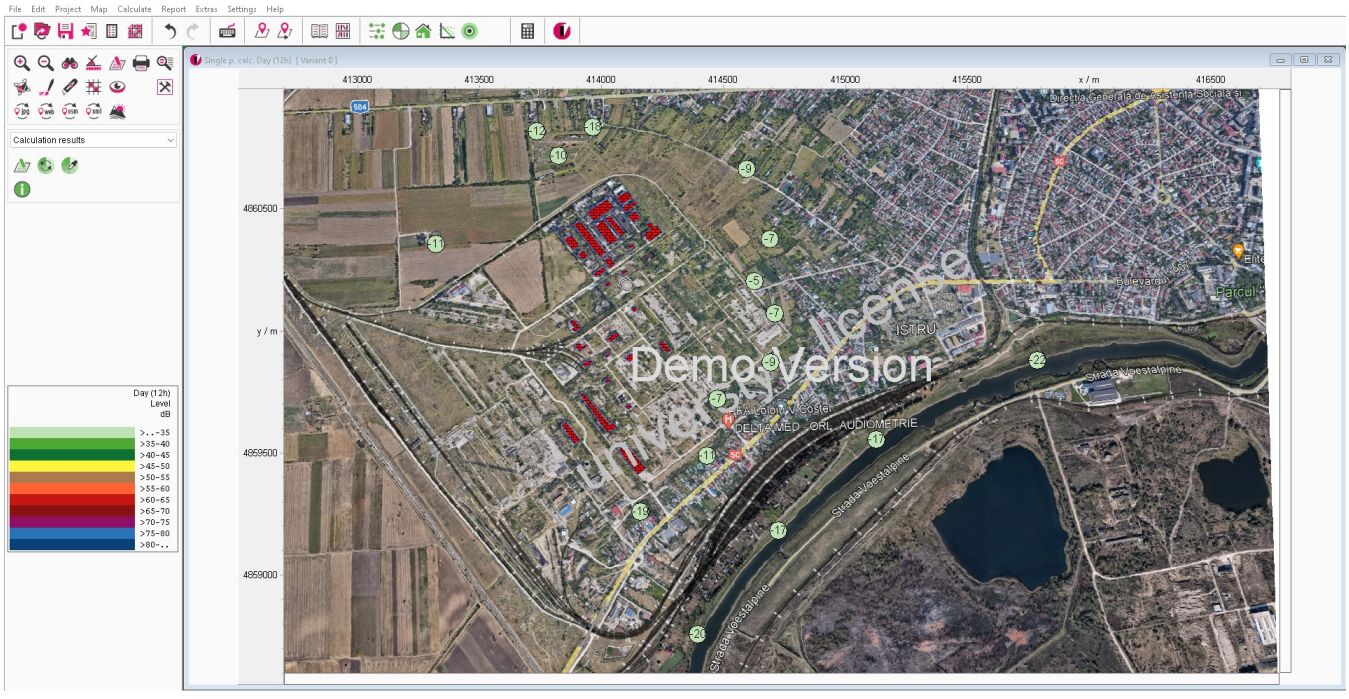
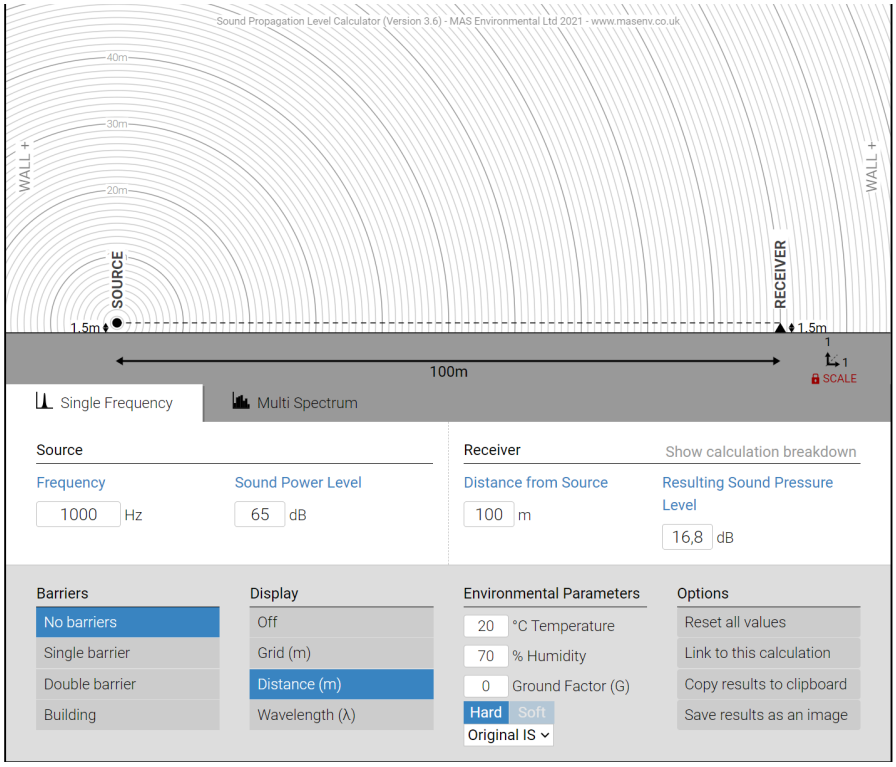


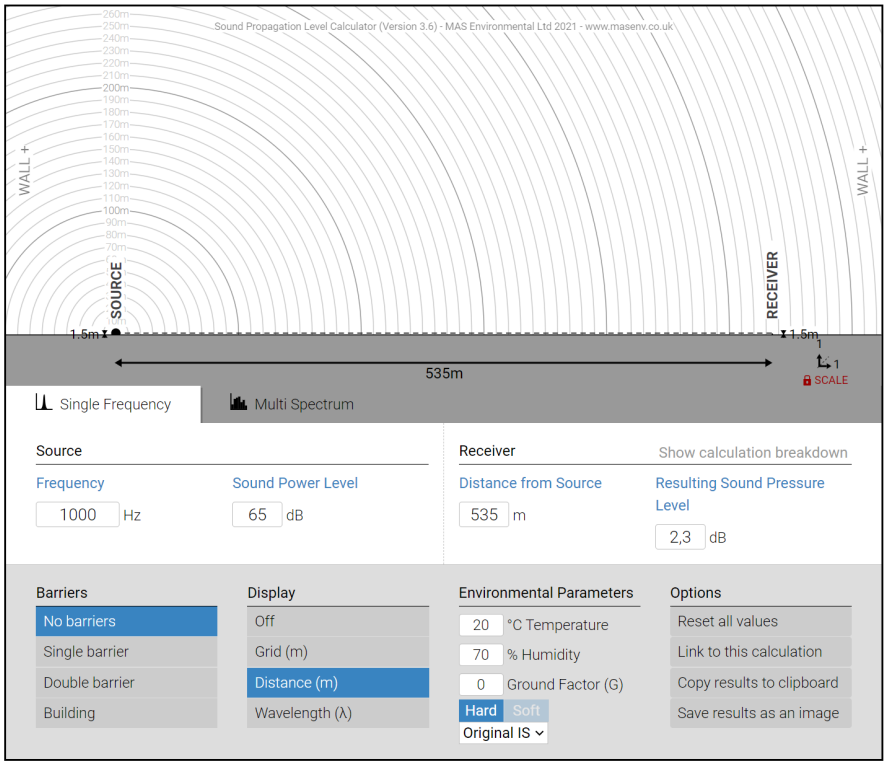
Figure 4 Noise levels recorded at the boundary of the nearest sensitive receptors and at the border between Romania and the Republic of Bulgaria during the operational phase of the project

2. use of "Sound Propagation Level Calculator" software

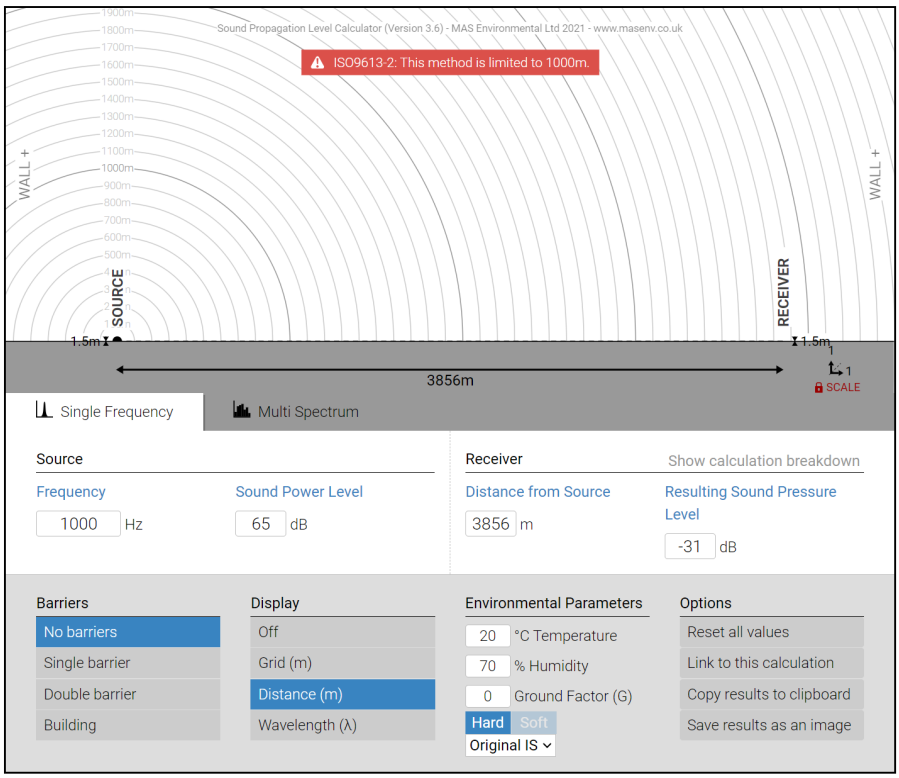
- the maximum noise level recorded at a distance of 100 m from the site is 16,8 dB



- the maximum noise level recorded at a distance of 535 m from the site (Drumul Cătunului) is 2,3 dB



- maximum noise level recorded at a distance of 3856 m from the site (position of the border with the Republic of Bulgaria)



According to this software and the ISO9613-2 method the noise level at the border of Romania with the Republic of Bulgaria is undetectable (the software gives negative values, -31dB), even more so at the border of Ruse.

According to the modelling using both software, the conclusion is that **the noise generated during the operation phase of the project will be totally suppressed in the direction of its propagation towards the border between Romania and the Republic of Bulgaria, which is why both software gave negative values for that area!**

In accordance with the provisions of Article 50, para. 3 of Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) - Directive, each combustion chamber in the waste incineration plant must be equipped with at least one additional burner. In the section "Main characteristics of the operational phase of the project" on page 47, it is described that each combustion chamber has one burner, type P 61, for LPG and on page 51 that each combustion chamber is equipped with a burner that is automatically switched on when the flue gas temperature falls below 850°C or 1100°C after the last injection of combustion air. From the information thus provided, it is not clear whether each combustion chamber is equipped with an additional burner to meet the requirements of Article 50(3) of the Directive.

Answer

As mentioned above, each combustion chamber is equipped with an additional burner which is automatically switched on by the electronic monitoring system of the incinerator's operation. These backup burners are identical to the main burners.

In accordance with Article 50, para. 4 of the Directive, waste incineration plants and waste co-incineration plants must use an automatic system which prevents the feeding of waste in the following cases:

during start-up operations, until the temperature referred to in paragraph 2 of that Article or the temperature determined in accordance with Article 51(1) is reached;

whenever the temperature referred to in paragraph 2 of that Article or the temperature specified in accordance with Article 51(1) is not maintained;

whenever continuous measurements show that any of the emission limit values is exceeded due to malfunction or failure of the waste gas treatment systems.

The response received indicated that the automation system independently monitors (records and prints) the following parameters: 1. oxygen and 2. temperature. With regard to the "Continuous and automatic waste feeding system", on page 53 it is described that waste to be incinerated is expected to be collected and brought to the incineration plant in containers. They are placed in the loading hopper where they are transported by a hydraulic loading system to the feed chute where a hydraulic piston transfers them to the primary chamber of the incinerator, thus ensuring a feed rate to the incinerator of 300 kg/h. The waste is fed continuously, subject to strict compliance with health and safety regulations.

We do not consider that the provisions of Article 50(4) of the Directive would be complied with in this way. First of all, the automated system should report exceedances of ELVs and not only measure oxygen and temperature parameters. On the other hand, the description of the "Continuous and automatic waste feeding system" states that the waste is fed automatically, but does not address the hypothesis of stopping the waste feeding before the required temperature is reached, when the required temperature is reduced and when the NEL is exceeded (oxygen and temperature cannot be attributed to the NEL) or connecting the automatic system to the waste gas treatment systems (in case of a breakdown, for example).

Answer

The automation system as well as the process computer software also coordinates the operation of the automatic feeding system so that:

- the incinerator feed is only switched on when the temperature in the combustion chambers has reached the designed parameters
- if the temperature in the combustion chambers drops below the limit values the automation system will instantly command the actions:
  - ➢ supplementing the fuel flow to the burners to increase temperature
  - ➢ temporary shutdown of the waste feed system until working temperatures are reached
  - ➢ in the event of a fault being detected in one of the burners, the automatic start-up of the back-up burner in that chamber shall be controlled, at the same time as a fault message accompanied by an audible signal is sent to the display of the process computer
- after temperatures reach normal operating values, the waste feed to the incinerator is resumed

It is described that "in the event of incinerator malfunctions, these are reported in advance by the automatic monitoring system, in which case the following procedural steps are applied: 1. the waste feed to the primary chamber is stopped (continuous feed system)". It cannot be concluded from the text that the supply of waste is prevented automatically, but rather prevented mechanically. In the way the automatic system is thus described, we consider that the requirements of Article 50(4) of the Directive have not been met.

Answer

The waste feed to the incinerator is coordinated by the electronic automation system, which in turn controls the mechanical and hydraulic systems of the entire incinerator as described above.

Comments on components and environmental factors

Comments on the "waste" factor:

The waste accepted will be of different types and supplied by different generators. The Contracting Authority indicates that it is considering the possibility to determine the characteristics of the waste suitable for incineration on the basis of the documents submitted individually, without requiring sampling, inspection and analysis of the waste before accepting it for incineration in the facility. According to BAT 11 of Implementing Decision (EU) 2019/2010, the following are required when accepting waste for incineration: Radioactivity detection for all waste and regular sampling and analysis of key properties/substances (e.g. calorific value, halogen and metal/metalloid content) of non-hazardous waste. Partial monitoring of waste deliveries as part of the general waste acceptance procedure does not demonstrate confirmation of the use of BAT in relation to the applicable conclusions in the reference document. The Contracting Authority does not provide for radioactivity detection for waste and periodic sampling of deliveries, which creates preconditions and risk of radioactive contamination, risk of combustion process and potential damage to environmental components.

Again, the information does not clarify whether the facility can accept waste from other countries and whether it anticipates adding other types of hazardous and/or non-hazardous waste for incineration in the future, concerns for which the risk of obtaining incorrect information about the type of waste, its suitability for incineration or the integrity of the packaging remains questionable.

Answer

The facility will only accept waste produced in Romania.

No waste other than that specified in the Environmental Impact Report will be accepted on site. Moreover, according to Romanian environmental legislation, an incineration plant can only process those categories and types of waste (according to European coding) specified in the environmental permit and this permit shall only include those categories and types of waste (according to European coding) specified in the Environmental Impact Report.

3. A diagram of the production site with the location and capacity of the combustion plant is shown, but no distinction is made between the areas for pre-disposal of the different types of waste accepted and the current maximum capacity of the site for pre-disposal of all types of waste.

Answer

A pre-storage area is not required on site.

Comments on the air component:

From the results of the mathematical model presented on pages 13-15, it can be seen that for pollutants with the same ELVs and similar deposition rates different maximum concentrations are obtained at Bulgaria/Russia distance, and the same concentrations are obtained for pollutants with different ELVSs, for example:

for total carbon (C) and hydrochloric acid (HCI) at a 24-hour NDE of 10 mg/Nm3, the resulting concentrations amount to 0.001 gg/m3 and 0.003 gg/m3 respectively:

for sulphur dioxide (SO2) and carbon monoxide (CO) at the 24-hour NDE of 50 mg/Nm³ , the resulting concentrations are 0.001 and 0.03 gg/m3 respectively:

an equal concentration of 0.03 gg/m³ was obtained for nitrogen oxides (NOx) and CO emissions at the 24-hour NEC of 200 mg/Nm³ and 50 mg/Nm3;

a uniform concentration of 0.03 gg/m³ was obtained for total C and HCl emissions at the 30-minute NEC of 20 mg/Nm³ and 60 mg/Nm³ .

These modelling results, although significantly lower than the specified air quality standards, raise questions about the accuracy with which the modelling was performed.

Answer

All the results obtained and presented have been correctly determined, observing all procedures and provisions of national and international environmental legislation.

The fact that certain values for different types of pollutants and for totally different averaging periods are close or sometimes similar does not affect the accuracy of the determinations or the values generated by the software used (both nationally and internationally accepted software).

As the plant is new, it is necessary to comply with all the requirements, including the pollutant emission levels set out in Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council for the incineration of waste pursuant to Directive 2010/75/EU of the European Parliament and of the Council.

Answer

The incinerator under consideration will strictly comply with all these values referred to. These requirements will be included in the environmental permit and in the unlikely event that the operator of the plant does not comply with these requirements, there is the institution " National Environmental Guard" which permanently checks and intervenes according to the legal provisions in any situation where an operator does not comply with the provisions of the environmental permit or any legal provision in the field and can order the plant to be shut down or request the cancellation of the environmental permit.

For dioxin pollutants, no clear and specific information was provided on the ability of the system to meet the strict technical requirements for lowering the temperature of the gas leaving the secondary chamber from 1100°C to 200°C in the shortest possible time.

Answer

It has been shown in the Environmental Impact Report that practically in the exhaust gas from the incinerator the concentrations of dioxins and furans are at "very low" values such as 0.000X **µg/mc x 10^{-6}** , i.e. at the border between Romania and Bulgaria the value determined will be **0.0003 µg/mc x 10^{-6}**

Also, in the Environmental Impact Report it was shown that there is no worldwide limit value for dioxin and furan concentration in immission but in the studies it is recommended a value of 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an averaging period of 8 hours and the values determined by modelling for dioxins and furans at the **border between Romania and Bulgaria will be 0.03 pg I.TEQ/Nmc i.e. 10 times lower than the value of 0.3 pg I.TEQ/ Nmc (recommended threshold)**.

Table 7 - Variation of PCDD & PCDF concentration with distance from emission point **(values in µg/mc x 10)$^{-6}$**

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling				Human health						Ecosystem			Obs.
								Value 8 hours (pg I.TEQ/Nmc)			Daily value (pg I.TEQ/Nmc)						
1 h	8 h	24 h	1 year	1 h	8 h	24 h	1 ye	limi t	uppe r	lowe r	lim it	uppe r	lowe r	lim it	uppe r	lowe r	
Bulg				**0.0**				0,3									<
Ruse				**0.0**													<
	Bulg				**0.00**												<
	Ruse				**0.00**												<
		Bulg				**0.00**											<
		Ruse				**0.00**											<
			Bulg				-										<
			Ruse				-										<

Table 8 - Variation of PCDD & PCDF concentration in relation to distance from emission point (values in pg I.TEQ/Nmc)

Propagation distances (m)				Concentrations determined by mathematical dispersion				Human health						Ecosystem			Obs.
								Hourly value (pg I.TEQ/Nmc)			Daily value (pg I.TEQ/Nmc)						
1 h	8 h	24 h	1 year	1 h	8 h	24 h	1 ye	limi t	upper thres	lower thres	lim it	upper thres	lower thres	lim it	upper thres	lower thres	
Bulga				**0.**				0,3									< VL
Ruse				**0.**													< VL
	Bulg				**0.0**												< VL
	Ruse				**0.0**												< VL
		Bulg				**0.0**											< VL
		Ruse				**0,0**											< VL
			Bulg				-										< VL
			Rus				-										< VL

For nitrogen oxides pollutants, it is not possible to make a declarative assumption of compliance with the NOx standards based on data with high uncertainty due to the different composition of the waste incinerated in the incinerator. The necessary analysis is missing. No nitrogen oxide treatment plant is foreseen.

Answer:

The study did not make declarative assumptions but analysed the technical characteristics of the gases emitted from the operation of the incinerator.

Taking into account the technology to be used by this incinerator and the BAT provisions, it is not mandatory for the analysed plant to be equipped with a nitrogen oxides treatment plant.

The dry acid gas abatement system that is intended to be used for treatment must be continuously overdosed with an alkaline reagent to compensate for occasional peak levels of HCI in high chlorine waste (e.g. plastics). Otherwise, it is impossible to delay the dosing of more alkaline reagent in response to an increase in HCl concentration in the flue gas and the occurrence of peak HCl concentrations leading to a violation of the NDE.

Answer:

The incinerator under consideration will be equipped with all monitoring, correction and dosing systems for all operating parameters as described in the study.

Moreover, the study determined the emission and immission concentrations for all pollutants for the worst-case situations in which the highest concentrations of the pollutants may occur (situations which are normally, as argued in the study, more than unlikely) and showed that for all of them the levels recorded at the site boundary for immission concentrations are well below the permissible limit values set in Romanian and European legislation, including for HCl:

Table 9 Modelled values for HCl concentrations in immission

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)	
30 min	24 h	30 min	24 h
400		0.1	
1500		0.08	
3010		0.05	
Bulgaria		**0.03**	
Ruse		**0.03**	
4915		0.03	
10000		0.01	
15000		0.003	
	775		0.01
	1180		0.008
	1760		0.005
	Bulgaria		**0.003**
	Ruse		**0.003**
	3640		0.003
	7370		0.001
	10000		0.0005
	15000		0.0003

As can be seen from the above data the **concentration** values **for HCL at the border between Romania and the Republic of Bulgaria and at the border of Ruse are at extremely low values that cannot generate an impact on the health of the population either directly or cumulatively with other activities in the area for any of the averaging periods that generate an impact on the population.**

Table 10 Modelled values for HCl concentrations in immission at the border and Ruse city limits

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)	
30 min	24 h	30 min	24 h
Bulgaria		**0.03**	
Ruse		**0.03**	
	Bulgaria		**0.003**
	Ruse		**0.003**

It is noted that no further examination and analysis of the injection devices, the relevant temperature at which the injection takes place and its control was carried out.

Answer:

All the equipment to be used in the incinerator assembly is of EU origin and EU type-approved and has all the necessary documentation for use within the EU, so there is no need to test it to see if it complies with EU operating and emission standards.

Comments on the water component:

The information presented does not sufficiently analyse the presence, distribution and impact of substances and pollutants identified by Directive 2008/105/EC and Directive 2013/39/EU, as well as other specific pollutants identified under Directive 2000/60/EEC as point or diffuse sources of water and soil pollution, both direct and airborne. It is necessary to implement the above actions and provide for measures to prevent the effects.

Answer:

The construction works as well as the incinerator installation works will result only in domestic wastewater from the sanitary facilities. These will be of the ecological toilet type and will be collected and disposed of by the company that will rent these ecological modules.

The operation of the incinerator results in industrial wastewater from the washing of containers for the transport of non-hazardous animal waste, from the washing of concrete platforms and bins used for the transport of waste, as well as domestic wastewater. This water will be collected via the on-site sewage system in a 10 cubic metre drainage basin, from where it will be taken to its own treatment plant and from there to the local sewage network. This treatment plant has been chosen, in terms of technology, so as to comply with the wastewater outlet loading standards at the level of the values laid down in H.G. 352/2005, NTPA 001, which comply exactly with the provisions of European legislation.

The substances specified in DIRECTIVE 2008/105/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on environmental quality standards in the field of water policy, amending and repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC, i.e. those in the table below (extract from the Directive) are not found at all in the waste water generated on the site analysed in the Environmental Impact Report:

"*ANNEX X*

LIST OF PRIORITY SUBSTANCES IN THE FIELD OF WATER

Number	CAS number ([1])	EU number ([2])	Name of priority substance ([3])	Identified as a priority hazardous substance
(1)	15972-60-8	240-110-8	Alachlor	
(2)	120-12-7	204-371-1	Anthracene	X
(3)	1912-24-9	217-617-8	Atrazine	
(4)	71-43-2	200-753-7	Benzene	
(5)	not applicable	not applicable	Diphenylether bromide ([4])	X ([5])
	32534-81-9	not applicable	Pentabromodiphenylether (position isomer numbers 28, 47, 99, 100, 153 and 154)	

(6)	7440-43-9	231-152-8	Cadmium and its compounds;	X
(7)	85535-84-8	287-476-5	Chloralkanes, C_{10-13} ([4])	X
(8)	470-90-6	207-432-0	Chlorfenvinphos	
(9)	2921-88-2	220-864-4	Chlorpyrifos (Chlorpyrifos-ethyl)	
(10)	107-06-2	203-458-1	1,2-dicloretan	
(11)	75-09-2	200-838-9	Dichloromethane	
(12)	117-81-7	204-211-0	Di(2-ethylhexyl)phthalate (DEHF)	
(13)	330-54-1	206-354-4	Diuron	
(14)	115-29-7	204-079-4	Endosulfan	X
(15)	206-44-0	205-912-4	Fluoranthene ([6])	
(16)	118-74-1	204-273-9	Hexachlorobenzene	X
(17)	87-68-3	201-765-5	Hexachlorobutadiene	X
(18)	608-73-1	210-158-9	Hexachlorocyclohexane	X
(19)	34123-59-6	251-835-4	Izoproturon	
(20)	7439-92-1	231-100-4	Lead and its compounds	
(21)	7439-97-6	231-106-7	Mercury and its compounds	X
(22)	91-20-3	202-049-5	Naphthalene	
(23)	7440-02-0	231-111-14	Nickel and its compounds	
(24)	25154-52-3	246-672-0	Nonyl-phenols	X
	104-40-5	203-199-4	(4-(para)nonylphenol)	X
(25)	1806-26-4	217-302-5	Octylphenols	
	140-66-9	not applicable	(4-(1,1',3,3'-tetramethylbutyl)-phenol)	
(26)	608-93-5	210-172-5	Pentachlorbenzene	X
(27)	87-86-5	231-152-8	Pentachlorphenol	

Number	CAS number ([1])	EU number ([2])	Name of priority substance ([3])	Identified as a priority hazardous substance
(28)	not applicable	not applicable	Polycyclic aromatic hydrocarbons	X
	50-32-8	200-028-5	(Benz(a)pyrene)	X
	205-99-2	205-911-9	(Benz(b)fluoranthene)	X
	191-24-2	205-883-8	(benz(g,h,i)perylene)	X
	207-08-9	205-916-6	(Benz(k)fluoranthene)	X
	193-39-5	205-893-2	(Indeno-(1,2,3-cd)-pyrene)	X
(29)	122-34-9	204-535-2	Simazine	
(30)	not applicable	not applicable	Tributyltin compounds	X
	36643-28-4	not applicable	(Tributyltin cation)	X
(31)	12002-48-1	234-413-4	Trichlorobenzenes	
(32)	67-66-3	200-663-8	Trichloromethane (chloroform)	
(33)	1582-09-8	216-428-8	Trifluralin	

The risk to the environment and human health in emergency or non-regulated situations for these substances has not been sufficiently addressed. The above actions need to be implemented and measures to prevent impacts need to be foreseen.

Answer:

According to the above, there are no substances referred to in the Environmental Impact Report in the wastewater generated at the site under consideration, and consequently no risks related to them.

Consideration should be given to all pollutants, their cumulative effect on entering surface water and associated groundwater that may also be affected, and thus the water uses of the Danube river terrace and, if necessary, to prevent discharge of wastewater from the site into the Danube river.

It is necessary to consider the substances and elements that will be deposited on the incinerator walls, which will subsequently enter the water when flushing the plant, and their impact accordingly.

Answer:

The technology to be used does not require and does not involve flushing the incinerator walls under any circumstances.

Modern wastewater treatment plants should be provided to treat all expected pollutants in wastewater.

Answer:

The site will be equipped with a state-of-the-art wastewater treatment plant that will ensure the treatment of wastewater produced on the site in such a way as to ensure effluent quality that complies with the maximum permissible values laid down in GD 352/2005, NTPA 001.

Sufficient distance from the border with Bulgaria should be ensured to limit the impact on the territory of the Republic of Romania, taking into account the possible transboundary impact of the international Danube river basin, water, soil and health of the citizens of Bulgaria.

Regarding the analysis of the potential transboundary impact that could be generated in the operation phase of the incinerator on the "*International Danube River Basin, water, soil and health of the citizens of Bulgaria"* in the Environmental Impact Report, all these aspects have been carefully analysed and it has been scientifically demonstrated that the operation of the project will in no way generate a negative impact on them.

Thus, we have:

A. for the Danube International River Basin

The resulting wastewater on the site is treated in a very modern wastewater treatment plant where it will undergo an advanced treatment process to comply with the provisions of GD 188/2002 amended and supplemented by GD 325/2005, Annex 3, Table 1 (NTPA 001/2005). After treatment, the water is discharged into the industrial sewage network, from where it flows into the Danube River.

The concentration of wastewater pollutants resulting from the site under analysis is within the maximum values regulated by GD 325/2005, Annex 2, Table 1 (NTPA 01/2005) and therefore these waters will not have a negative impact on transboundary waters.

The resulting wastewater flow at the site analysed is 3.479 m^3 /day = 0.434 m^3 /hour = 0.00012 m^3 /s. The pollutant load of these waters is within the regulated limit values.

The quality of the receiving water (the Danube River), whose multi-year average flow is 6040 m^3 /s, will not be affected by the wastewater resulting from the treatment of the water from the site under analysis because its flow is more than insignificant (0.00012 m^3 /s wastewater compared to the average flow of the Danube River of 6040 m^3 /s) and the concentrations of pollutants when discharged into the outfall are within the legal limits (NTPA 001/2005) being efficiently treated in the treatment plant on the site.

Bearing in mind the following:

- the average annual flow of the Danube River is 6040 m^3 /s
- the flow of wastewater from the site analysed and treated in the site's treatment plant before discharge into the natural receiver (Danube River) is 0.00012 m^3 /s and is more than insignificant compared to the average annual flow of the river
- the flow of wastewater from the analysed site and treated in its own wastewater treatment plant, before discharge into the natural receiver (Danube river), more than insignificant compared to the flow of wastewater discharged from the Giurgiu wastewater treatment plant and discharged into the Danube river as well
- the dispersion of the discharged water into the Danube River is instantaneous analysed by the ratio of the resulting wastewater flow at the analysed site (0.00012 m^3 /s) to the average annual flow of the Danube River (6040 m^3 /s), i.e. the flow of treated water in the plant at the project site is 50333 x 10^3 times lower than the flow of the Danube River

B. for the environmental factor soil

Bearing in mind the following:

1. the entire activity will take place only on concrete platforms
2. the incinerator activity will not have any impact on the soil
3. between the project site and the border with the Republic of Bulgaria there are multiple constructions of all kinds, plots with different vegetation, etc.
4. the distances between the project site and the border (3317 m) and the town of Ruse (3856 m) are very large

it is impossible for the operation of the project under consideration to generate the slightest negative impact on the soil that would propagate to the border, let alone to the boundary of Ruse.

C. for the health of the population

As regards "the impact on the health of the population at cross-border level" this issue has been analysed with all responsibility both in the Environmental Impact Report and in the answers submitted so far to the 2 rounds of questions received from the Bulgarian Ministry of Environment and Water.

According to data obtained by scientific methods recognized both at the Romanian and EU level, it has been demonstrated that the health of the population in the immediate vicinity of the incinerator site and even more so the health of the population of the Republic of Bulgaria will not be affected in any way by the operation of this incinerator.

The scientific data obtained and analysed in the expert study prepared and presented to all competent authorities are presented below for each of the pollutants potentially emitted into the atmosphere during the operation of the incinerator.

At the same time, you have the interpretation of the results and the assessment of the potential cross-border impact on the population.

CARBON MONOXIDE (CO)

Table 11 - Variation of CO concentration with distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			
8 h	24 h	1 year	8 h	24 h	1 year	limit value	upper threshold	lower threshold	limit value	upper threshold	lower threshold	
Bulgaria			**0.1**						10000	7000	5000	
Ruse			**0.1**									
	Bulgaria			**0.03**								Value 166666 times lower threshold value
	Ruse			**0.03**								Value 166666 times lower threshold value
		Bulgaria			**0.001**							
		Ruse			**0.001**							

NO_2

Table 12 - Variation of NO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling			Human health						Obs.	
						Hourly value (µg/mc)			Annual value (µg/mc)				
1 h	24 h	1 year	1 h	24 h	1 year	limit	upper	lower	limit	upper	lower	1 h	1 year
Bulgaria			**0.4**				200			40		**500 times lower than the**	
Ruse			**0.4**									**500 times lower than the**	
	Bulg			**0.03**									
	Ruse			**0.03**									
		Bulgaria			**0.001**								**40 000 times lower than the permissible**
		Ruse			**0.001**								**40 000 times lower than the permissible**

SO_x

Table 13 - Variation of SO_2 concentration with distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling			Human health						Comments	
						Hourly value (µg/mc)			Daily value (µg/mc)				
1 h	24 h	1 year	1 h	24 h	1 year	limit	upper	lower	limit	upper	lower	1 h	24 h
Bulgaria			**0.02**			350			125	75	50	**17500 times lower than the maximum**	
Ruse			**0.02**									**17500 times lower than the maximum**	
	Bulgaria			**0.001**									**Value 50000 times lower**
	Ruse			**0.001**									**Value 50000 times lower**
		Bulg			**0.000**								
		Ruse			**0.000**								

TSP

Table 14 - Variation of TSP concentration with distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling				Human health						Comments	
								Hourly value (µg/mc)			Daily value (µg/mc)				
1 h	8 h	24 h	1 year	1 h	8 h	24 h	1 year	limit	upper	lower	limit	upper	lower	1 h	24 h
Bulgaria				**0.01**				50	35	25	40	28	20	**Value 25000 times**	
Ruse				**0.01**										**Value 25000 times**	
		Bulgaria				**0.00006**									**3 3 3 3 3 times**
		Ruse				**0.00006**									**3 3 3 3 3 times**
			Bulg				**0.00**								
			Ruse				**0.00**								

HCl

Table 15 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion		Concentrations determined by mathematical dispersion modelling **(mg/mc)**		Human health						Comments
						Hourly value **(mg/mc)**			Annual value (mg/mc)			
30 min	24 h	30 min	24 h	30 min	24 h	limit	upper threshold	lower threshold	limit	upper threshold	lower threshold	1 h
Bulgaria		**0.03**		0.00003		1490	74,52	52				**Value 1733333 times lower**
Ruse		**0.03**		0.00003								**Value 1733333 times lower**
	Bulga		**0.00**		0.000							
	Ruse		**0.00**		0.000							

According to data from the world scientific literature[2] , the following conclusions have been reached after numerous researches:

EFFECTS ON HUMANS

Single exposure

The National Research Council has reviewed the toxicological effects of HCl in humans (NRC 1987, 1991). Reports have concluded that exposure to irritating concentrations of HCl can lead to coughing, pain, inflammation, oedema and flaking in the upper respiratory tract. Acute exposure to high concentrations could cause constriction of the larynx and bronchi and closure of the glottis. Because HCl is highly irritating to the mucous surfaces of the respiratory tract and to the eyes, HCl has good warning properties.

Henderson and Haggard (1943) summarized information from several sources on the length of time various concentrations of HCl exposure could be tolerated by healthy workers and the effects that might occur (Table D-1). Matt (1889) stated in his doctoral thesis that work is impossible when inhaling air containing HCl at concentrations of 50 to 100 ppm; work is difficult but possible when the air contains concentrations of 10 to 50 ppm; and work is unworkable at 10 ppm. However, the exposure protocol used by Matt (1889) included only two individuals and three exposure concentrations. Each individual was exposed once to HCl at 10 ppm (10 min), 70 ppm (15 min) and 100 ppm (15 min). When exposed to 70 ppm, individuals left the exposure chamber once briefly during the 15-min period, and when exposed to 100 ppm, they left several times due to acute discomfort. During exposure to high concentrations, individuals experienced coughing, an increase in breathing rate and severe irritation of the throat and respiratory tract. Matt (1889) included in his report a description by another researcher of another volunteer exposed to HCl at 50 ppm for 13 minutes. Heyroth (1963) indicated in an editorial note that, in his opinion, most people can detect HCl in the air at 1-5 ppm and that 5-10 ppm is an unpleasant exposure concentration. Elkins (1959) was of the opinion that exposure to HCl at 5 ppm is immediately irritating to the nose and throat but without long-lasting effects. Sayers et al. (1934) expressed the opinion that prolonged exposure to 1-5 ppm resulted in mild symptoms, exposure to 5-10 ppm for 1 hour was the maximum exposure concentration without serious effects, and 150-200 ppm was dangerous in 30-60 min.

TABLE D-1 Interpretations of Various HCl Exposure Concentrations in the Workplace

HCl Concentration, ppm	Exposure Duration	Physiological Responses	References
1,000-2,000	Brief	Dangerous for even short exposures	Henderson and Haggard 1943
50-100	1 hr	Maximum tolerable concentration	Henderson and Haggard 1943
10-50	A few hr	Maximum tolerable concentration	Henderson and Haggard 1943
35	Unspecified short time	Irritation of throat	Henderson and Haggard 1943
10	Prolonged	Maximum allowable concentration	Henderson and Haggard 1943
1-5	—	Odor threshold	Heyroth 1963

[2] Assessment of Exposure-Response Functions for Rocket-Emission Toxicants. National Research Council (US) Subcommittee on Rocket-Emission Toxicants. Washington (DC): National Academies Press (US); 1998.

PHYSICAL AND CHEMICAL PROPERTIES

CAS No.:	7647-01-0
Molecular formula:	HCl
Molecular weight:	36.47
Chemical name:	Hydrogen chloride
Synonyms:	Muriatic acid, spirits of salt, chlorohydric acid, hydrochloric acid gas
Physical state:	Gas
Boiling point:	-84.9°C
Melting point:	-144.8°C
Vapor density:	1.26 (air = 1.0)
Vapor pressure:	40 mm Hg at 17.8°C
Solubility:	Highly soluble in water, forming hydrochloric acid (82.3 g/100 g of water at 0°C)
Color:	Colorless as a gas
Conversion factors	1 ppm = 1.49 mg/m^3 at 25°C, 1 atm:
1 mg/m^3 = 0.671 ppm	

HF

Table 16 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling		Human health						Vegetation			Comments
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit	upper threshold	lower threshold	limit	upper threshold	lower threshold	limit	upper threshold	lower threshold	1 h
Bulgaria		**0.0001**		36000	20000	800							**Value 8000000 times lower**
Ruse		**0.0001**											**Value 8000000 times lower**
	Bulg		**0.000**										
	Ruse		**0.000**										

According to data from the world scientific literature[3] , the following conclusions have been reached after numerous researches:

TABLE 3–1 Summary Table of AEGL Values (ppm [mg/m^3])

Classification	10 min	30 min	1 h	4 h	8 h	End Point (Reference)
AEGL-1 (Nondisabling)	1.0 (0.8)	1.0 (0.8)	1.0 (0.8)	1.0 (0.8)	1.0 (0.8)	Threshold, pulmonary inflammation in humans (Lund et al. 1997, 1999)
AEGL-2 (Disabling)	95 (78)	34 (28)	24 (20)	12 (9.8)	12 (9.8)	NOAEL for lung effects in cannulated rats (Dalbey 1996; Dalbey et al. 1998a);[a] sensory irritation in dogs (Rosenholtz et al. 1963)[b]
AEGL-3 (Lethal)	170 (139)	62 (51)	44 (36)	22 (18)	22 (18)	Lethality threshold in cannulated rats (Dalbey 1996; Dalbey et al. 1998a);[c] lethality threshold in mice (Wohlslagel et al. 1976)[d]

a 10-min AEGL-2 value.

b 30-min and 1-, 4-, and 8-h AEGL-2 values.

c 10-min AEGL-3 value.

d 30-min and 1-, 4-, and 8-h AEGL-3 values.

Abbreviations: mg/m^3, milligrams per cubic meter; ppm, parts per million.

TABLE 3–2 Chemical and Physical Data for Hydrogen Fluoride

Parameter	Value	Reference
Synonyms	Hydrofluoric acid gas, anhydrous hydrofluoric acid	Budavari et al. 1996
Molecular formula	HF	Budavari et al. 1996
Molecular weight	20.01	Budavari et al. 1996
CAS Registry Number	7664–39–3	Budavari et al. 1996
Physical state	Gas	Budavari et al. 1996
Color	Colorless	Budavari et al. 1996
Solubility in water	Miscible in all proportions	Perry et al. 1994
Vapor pressure	760 mm Hg at 20°C	ACGIH 2002
Density (water=1)	1.27 at 34°C	Perry et al. 1994
Melting point	−87.7°C	Perry et al. 1994
Flammability	Not flammable	Weiss 1980
Boiling point	19.5°C	Perry et al. 1994
Conversion factors	1 ppm=0.82 mg/m^3 1 mg/m^3=1.22 ppm	ACGIH 2002

HUMAN TOXICITY DATA

2.1. Acute lethality

No data have been located on human deaths from inhalation exposure to HF alone. However, several studies indicate that humans have died from accidental exposure to hydrofluoric acid (Kleinfeld 1965; Tepperman 1980; Braun et al. 1984; Mayer and Gross 1985; Chan et al. 1987; Chela et al. 1989; ATSDR 1993). These accidents involved acute inhalation of HF in combination with dermal exposure involving severe skin damage. Deaths were attributed to pulmonary oedema and

[3] Acute Exposure Guideline Levels for Selected Airborne Chemicals: Volume 4 - National Research Council (US) Subcommittee on Acute Exposure Guideline Levels Washington (DC): National Academies Press (US); 2004.

cardiac arrhythmias, the latter being the result of acidosis due to hypocalcaemia and hypomagnesaemia pronounced following dermal fluoride absorption. Doses or exposure levels could not be determined.

2.2. Non-lethal toxicity

Ronzani (1909) and Machle et al. (1934) cite the first reports in which a HF concentration of 0.004% (40 ppm) was used in the treatment of tuberculosis. Exposure times were not specified. The sharp, irritating odour of HF is perceptible at 0.02-0.13 ppm (Sadilova et al. 1965; Perry et al. 1994).

TOC

Table 17 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit	upper	lower	limit	upper	lower	limit	upper	lower	
Bulg		**0.03**											Even if the world scientific literature does not specify limit values for the health of the population**, it is very clear that the values of concentrations in immission (those that can influence human health) resulting from the incinerator activity and recorded at the border with the**
Ruse		**0.03**											
	Bulg		**0.00**										
	Ruse		**0.00 1**										

DIOXINS AND FURANS

Table 18 - Variation of PCDD & PCDF concentration in relation to distance from emission point **(values in µg/mc x 10)-6**

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling				Human health						Ecosystem			Obs.
								Value 8 hours (pg I.TEQ/Nmc)			Daily value (pg I.TEQ/Nmc)						
1 h	8 h	24 h	1 year	1 h	8 h	24 h	1 year	limit	upper	lower	limit	upper	lower	limit	upper	lower	
Bulg				**0.0**				0,3									<
Ruse				**0.0**													<
	Bulg				**0.00**												<
	Ruse				**0.00**												<
		Bulg				**0.00**											<
		Ruse				**0.00**											<

Table 19 - Variation of PCDD & PCDF concentration in relation to distance from emission point (values in pg I.TEQ/Nmc)

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling				Human health						Obs.
								Value 8 8re (pg I.TEQ/Nmc)			Daily value (pg I.TEQ/Nmc)			
1 h	8 h	24 h	1 year	1 h	8 h	24 h	1 year	limit valu	upper thres	lower thres	lim it	upper thres	lower thres	
Bulg				**0.0**				0,3						
Ruse				**0.0**										
	Bulg aria				**0.00 9**									**33.33 times lower than the maximum**
	Ruse				**0.00 7**									**42.85 times lower than the maximum**
		Bulg				**0.00**								
		Ruse				**0.00**								

Regarding the global population health impact of PCDD & PCDF (dioxins and furans) concentration in immission there is no limit value, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period.

The conclusions of the information presented above on the transboundary impact of incinerator operation on the human health of the inhabitants of the city of Ruse are as follows:

1. CO - the values recorded for concentration in immission at the border between Romania and the Republic of Bulgaria as well as at the Romanian border of Ruse are well below the lower threshold values for human health. Thus, we have:

a. at the border between Romania and the Republic of Bulgaria - **value 166666 (one hundred and sixty-six thousand six hundred and sixty-six) times less than the lower threshold value**

b. Romanian border of Ruse - **value 166666 times lower threshold value**
The impact of the operation of the incinerator on the health of the inhabitants of the city of Ruse will be neutral.

2. NO_2 - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the upper human health threshold.

a. at the border between Romania and the Republic of Bulgaria:

- one hour averaging period - **value 500 (five hundred) times lower than the permissible limit value**
- mediation period one year - **value of 40 000 (forty thousand) times less than the admissible limit value**

b. the Romanian border of Ruse - **value of 40 000 (forty thousand) times lower than the permissible limit value**

- one hour averaging period - **value 500 (five hundred) times lower than the permissible limit value**
- mediation period one year - **value of 40 000 (forty thousand) times less than the admissible limit value**

The impact of the operation of the incinerator on the health of the inhabitants of the city of Ruse will be neutral.

3. SO_X - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the limit values for the 1 h averaging period and the lower threshold values for the 24 h averaging period (related to human health).

a. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 17500 (seventeen thousand five hundred) times lower than the admissible limit value**
- 24-hour averaging period - **value 50,000 (fifty thousand) times lower than the permissible limit value**

b. the Romanian border of Ruse

- mediation period one hour - **value 17500 (seventeen thousand five hundred) times lower than the admissible limit value**
- averaging period 24 0re - **value 50 000 (fifty thousand) times lower than the admissible limit value**

The impact of the operation of the incinerator on the health of the inhabitants of the city of Ruse will be neutral.

4. TSP - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the lower threshold values for the 1 h averaging period and the lower threshold values for the 24 h averaging period (related to human health).

a. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 25000 (twenty-five thousand) times lower threshold value**
- 24-hour averaging period - **value 33333 (thirty-three thousand three hundred and thirty-three) times lower threshold value**

b. the Romanian border of Ruse

- mediation period one hour - **value 25000 (twenty-five thousand) times lower threshold value**
- 24-hour averaging period - **value 33333 (thirty-three thousand three hundred and thirty-three) times lower threshold value**

The impact of the incinerator operation on the health of Ruse residents will be neutral

5. HCl - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the lower threshold values for human health.

a. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 1733333 (one million seven hundred and thirty-three thousand three hundred and thirty-three) times lower threshold value**

b. the Romanian border of Ruse

- mediation period one hour - **value 1733333 (one million seven hundred and thirty-three thousand three hundred and thirty-three) times lower threshold value**

The impact of the incinerator operation on the health of Ruse residents will be neutral

6. HF - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the lower threshold values for human health.

a. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 8000000 (eight million) times lower threshold value**

b. the Romanian border of Ruse

- mediation period one hour - **value 8000000 (eight million) times lower threshold value**

The impact of the incinerator operation on the health of Ruse residents will be neutral

The impact of the incinerator operation on the health of Ruse residents will be neutral

7. dioxins and furans - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the minimum recommended values for human health.

a. at the border between Romania and the Republic of Bulgaria

- averaging period 8 hours - **value 33.33 (thirty-three) times lower than the recommended minimum values**

b. the Romanian border of Ruse

- averaging period 8 hours - **value 42.85 (approximately forty-three) times lower than the recommended minimum values**

The impact of the incinerator operation on the health of Ruse residents will be neutral

In terms of IP impacts on people and possible health risks of implementing the investment proposal:

Active stationary emission sources from nearby industrial areas - Romanian and Bulgarian enterprises - have not been identified and are not presented. The emissions of air pollutants generated by them and their distribution are not presented, and their cumulative emission potential

and emission contribution to air pollution in the cities of Ruse and Giurgiu are not calculated. Projected emissions from this IP are also included.

Answer:
As analysed in the Environmental Impact Report on pages 199 - 201 we have:
Environmental factor air

In order to make a correct and complete analysis of a possible transboundary impact of the operation of the incinerator at the location under consideration, an analysis of:

1. the activities of companies operating in the Giurgiu municipal area that may have a significant impact on air quality, i.e. those companies holding IPPC permits.

The main economic operators regulated by environmental permits[4] are:

- SCUT Giurgiu SA (now SC Global Energy Production SA) - thermoelectric power plant is located in the western part of Giurgiu. In order to reduce its impact on air quality, the plant was equipped with burners with reduced NO_X and the fuel was changed from conventional coal to natural gas. Emission quantities, mainly SO_x , NO_x, CO and PM_{10} have decreased significantly from year to year due to the reduced operating capacity.
- SC Poll Chimic SRL is located in the eastern part of Giurgiu. Its main activity is the manufacture of other basic chemical products. Emissions from this economic operator are those from the thermal power plant that provides the thermal agent for this location and from the manufacturing process. The most important pollutants emitted are: SO_2 , NO_x , CO and NMVOC.
- SC UCO Țesătura SRL is located in the eastern industrial area of Giurgiu and its main activity is the processing of spun cotton fibres and the production of fabrics and textiles. The unit has ceased its activity.

2. the ratio of emissions generated by the incinerator's activity to emissions generated by the activities of other companies located around Giurgiu municipality.

- Greenhouse gas emissions - the amount of greenhouse gas emissions from incineration activity was calculated to be 211 t CO_2 /year if the incinerator were operated at full capacity and maximum time.
- the amounts of greenhouse gases resulting from other activities in the area (SC Global Energy Production SA - as the most significant economic agent in terms of combustion emissions) were:
  - 2017 - 5287 t CO_2
  - 2018 - 6244 t CO_2
  - 2019 - 5233 t CO_2
- the ratio between the emissions generated by the incinerator activity and the emissions generated by the activities of the other companies located around Giurgiu municipality - only the flue gas emissions resulting from the activity of SC Global Energy Production SA will be taken into account and will be related to the amount of flue gas emissions estimated to result from the activity of SC Friendly Waste Romania SRL in one year (i.e. 211 t CO_2/year)
  - 2017 - 211 / 5287 t CO_2 = 3.99
  - 2018 - 211 / 6244 t CO_2 = 3.38 %
  - 2019 - 211 / 5233 t CO_2 = 4.03 %

[4] "Revised Master Plan for Water and Sewerage Infrastructure in Giurgiu County" - revision 2

It is noted that this ratio is insignificant and that the share of greenhouse gas emissions from the incinerator activity is not likely to cause significant negative effects on the environmental factor air and climate in the area.

3. the prevailing direction of the air (wind) currents and their speed. For such an analysis, data collected for the years 2010 ÷ 2015 were used [5]

Table 20 - Average annual wind and calm frequency (%) at Giurgiu weather station

Years	Direction								
	N	**NE**	**E**	**SE**	**S**	**SV**	**V**	**NV**	**CALM**
2010	6,32	23,3	10,94	2,25	7,05	22,24	16,82	3,11	7,98
2011	5,7	21,31	14,7	2,67	5,57	21,27	15,48	4,17	9,13
2012	4,58	19,18	18	3,07	7,76	20,62	15,41	3,32	7,5
2013	3,8	17,7	19,8	3,55	5,05	16,5	22,82	3,39	7,47
2017	4,02	19,03	24,71	4,1	3,8	14,32	18,2	4,14	7,75
2015	3,42	12,8	24,5	2,48	3,78	16,28	23,34	3,83	9,57

Table 21 - Average monthly and annual wind speed (m/s) at Giurgiu weather station

Years	Direction												Annual
	I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**IX**	**X**	**XI**	**XII**	
2010	2,4	2,7	3,1	2,3	1,8	1,6	1,3	1,5	2,2	2,4	2,2	2,0	**2,1**
2011	1,6	3,0	2,6	2,5	1,7	1,4	1,6	1,5	1,7	1,9	1,6	1,9	**1,9**
2012	2,7	3,1	2,3	2,1	1,8	1,6	2,1	1,7	1,9	1,9	1,9	2,5	**2,1**
2013	2,2	3,1	2,9	2,3	1,9	1,4	1,4	1,7	2,0	1,6	2,6	1,6	**2,1**
2017	2,4	2,1	2,8	2,7	1,4	1,5	1,5	1,6	1,8	1,8	1,8	2,7	**2,0**
2015	2,3	2,5	2,7	2,1	1,5	1,4	1,3	1,5	1,5	1,6	2,2	2,0	**1,9**

[5] Air Quality Report 2016

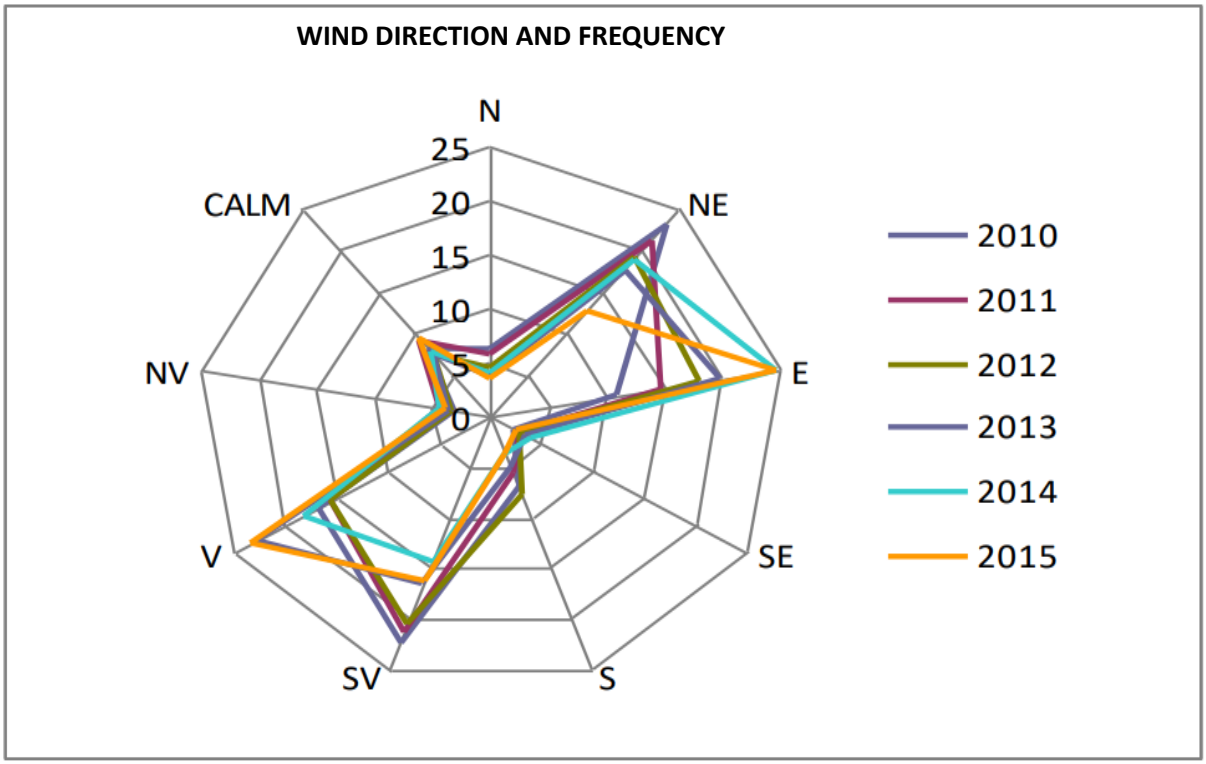


Figure 84 - Diagram representing wind direction and frequency

From the analysis of all the information presented it can be concluded that the transboundary impact on the air environment factor of the incinerator activity is neutral on all levels (direct, indirect, secondary, cumulative, short/medium/long term, temporary, permanent) whereas:

- the amounts of air pollutants emitted from the operation of the incinerator are low and within legal limits
- there are no areas with exceedances of pollutant concentrations and the nearest boundary point is 3317 m from the flue gas stack of the analysed incinerator
- the wind direction towards the border with Bulgaria (from the N and NE) is for a period of approx. 23,4 % of the year but the propagation of pollutants towards the border is non-existent because, according to mathematical modelling, the concentrations in the immission are very low and below the VLA levels in the vicinity of the emission point (incinerator stack).

As shown in the answer to the previous point all the concentration values that will be recorded in the immission for the pollutants that will be emitted into the atmosphere from the operation of the incinerator under consideration are extremely low in relation to the minimum threshold values (in the order of millions, hundreds of thousands or tens of thousands).

Taking into account the fact that all the other industrial installations in operation near the project under analysis operate under environmental permits and that the air emissions generated by them are constantly monitored by both the Giurgiu Environmental Protection Agency and the Giurgiu Environmental Guard, it is very clear that all these emissions, both independently and cumulatively, are below the minimum values provided for in Romanian and European legislation. The same applies to the values recorded in the immission for pollutants resulting from the activity of these industrial installations.

Corroborating these aspects with the results of mathematical modelling, which determined the immission values for pollutants emitted into the atmosphere from the operation of the incinerator, both at the border between Romania and the Republic of Bulgaria and at the northern boundary of the city of Ruse, and which showed that these values are extremely low compared to the minimum threshold values regulated or recommended for the health of the population, it is

obvious that the operation of the project under consideration will not have a negative impact on the health of the population in the areas mentioned above, either directly or cumulatively.

As regards the effects of the operation of industrial objectives on the territory of the Republic of Bulgaria, it should be noted that they should also comply with the provisions of European legislation on the concentrations of pollutants resulting both in emissions and imissions, i.e. they must be well below the minimum values and in no case above them or their limits. Corroborating this aspect with the following values obtained for the concentrations in immission for the pollutants resulting from the operation of the analysed project at the border between Romania and the Republic of Bulgaria as well as at the northern limit of Ruse:

NO_2

Table 22 - Variation of NO_2 concentration with distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			
8 h	24 h	1 year	8 h	24 h	1 year	limit valu	upper thresh	lower thresh	limit valu	upper thresh	lower thresh	
Bulgari			**0.1**						1 0 0 00	7000	5000	
Ruse			**0.1**									
	Bulga ria			**0.03**								Value 166666 times lower threshold
	Ruse			**0.03**								Value 166666 times lower threshold
		Bulga			**0.001**							
		Ruse			**0.001**							

SO_x

Table 23 - Variation of SO_2 concentration with distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling			Human health						Comments	
						Hourly value (µg/mc)			Daily value (µg/mc)				
1 h	24 h	1 year	1 h	24 h	1 year	limit	upper threshold	lower threshold	limit	upper threshold	lower threshold	1 h	24 h
Bulgaria			**0.02**			350			125	75	50	**17500 times lower than the maximum**	
Ruse			**0.02**									**17500 times lower than the maximum**	
	Bulgaria			**0.001**									**Value 50000 times lower**
	Ruse			**0.001**									**Value 50000 times lower**
		Bulgaria			**0.000**								
		Ruse			**0.000**								

TSP

Table 24 - Variation of TSP concentration with distance from emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling				Human health						Comments	
								Hourly value (µg/mc)			Daily value (µg/mc)				
1 h	8 h	24 h	1 year	1 h	8 h	24 h	1 year	limit	upper threshold	lower threshold	limit	upper threshold	lower threshold	1 h	24 h
Bulgaria				**0.01**				50	35	25	40	28	20	**Value 25000 times lower threshold**	
Ruse				**0.01**										**Value 25000 times lower threshold**	
		Bulgaria				**0.0006**									**33333 times lower**
		Ruse				**0.0006**									**33333 times lower**
			Bulgaria				**0.000**								
			Ruse				**0.000**								

HCl

Table 25 - Variation of HCl concentration with distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling		Concentrations determined by mathematical dispersion modelling (mg/mc)		Human health						Comments
						Hourly value (mg/mc)			Annual value (mg/mc)			
30 min	24 h	30 min	24 h	30 min	24 h	limit valu	upper thresh	lower thresh	limit valu	upper thresh	lower thresh	1 h
Bulgaria		**0.03**		0.00003		1490	74,52	52				**Value 1733333 times lower**
Ruse		**0.03**		0.00003								**Value 1733333 times lower**
	Bulga		**0.003**		0.0000							
	Ruse		**0.003**		0.0000							

HF

Table 26 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling		Human health						Vegetation			Comments
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit	upper thresh	lower thresh	limit	upper thresh	lower thresh	limit	upper thresh	lower thresh	1 h
Bulgaria		**0.0001**		36000	20000	800							**8000000 times lower threshold**
Ruse		**0.0001**											**8000000 times lower threshold**
	Bulga		**0.000**										
	Ruse		**0.000**										

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Table 27 - Variation of PCDD & PCDF concentration in relation to distance from emission point (values in pg I.TEQ/Nmc)

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (pg I.TEQ/Nmc)				Human health						Obs.
								Value 8 8re (pg I.TEQ/Nmc)			Daily value (pg I.TEQ/Nmc)			
1 h	8 h	24 h	1 year	1 h	8 h	24 h	1 year	limit value	upper thresh	lower thresh	limit	upper thresh	lower thresh	
Bulga				**0.03**				0,3						
Ruse				**0.03**										
	Bulgaria				**0.009**									**33.33 times lower than the maximum**
	Ruse				**0.007**									**42.85 times lower than the maximum**
		Bulga				**0.00**								
		Ruse				**0.00**								

it is very clear that the immission values for the pollutants generated by the operation of the project are extremely low in relation to the minimum threshold values (even lower than the maximum permissible values) related to the impact on human health. Consequently, a negative cumulative effect on the health of the population from the operation of the project under consideration and the operation of the industrial objectives on the territory of the Republic of Bulgaria could only occur if their individual and/or cumulative emissions exceed the minimum threshold values in emission and/ or immission or if there were such exceedances this would violate the provisions of European legislation and would generate a negative transboundary impact on the health of the population from the Republic of Bulgaria to Romania!

The answer to Question III.3 on page 99 states that emissions from IP "are so low that they could not cause a cumulative effect with any other source of emissions if operated within legal parameters." This is just an assumption by the Environmental Impact Report authors, which is not obviously supported by a predictive model.

The above answer also covers this question.

No specific health risk assessment was carried out on the basis of which appropriate measures to prevent negative impacts during the implementation of the IP were justified, but scientific data on the overall impact of the pollutant in question on human health, regardless of the activity from which it is generated, were considered. The additional information only states as a measure that, if the technological process is followed, no risk would be expected, which in practice is a conclusion or recommendation, but not a concrete health risk assessment.

The study paid particular attention to the analysis of the potential impact on the health of the population that could be generated by the operation of the project, both under normal and abnormal conditions, taking into account the specificity of the project.

The effects of project implementation on the health of the population are related to implementation, commissioning and operation in relation to the potentially affected population.

Given the specifics of the project, the construction of an incinerator for hazardous and non-hazardous waste, the population and human health are likely to be affected by the project, which is why particular attention will be paid to these aspects.

The land proposed for the implementation of the project is located inside the Industrial Platform 2 of the former Giurgiu Chemical Plant. The site contains the foundations of the buildings of the chemical plant. The whole industrial platform is unhealthy, with foundations and/or buildings in an advanced state of degradation, abandoned waste, spontaneous vegetation.

The industrial platform is included in the Local Urban Planning Regulation (RLU) for the General Urban Plan (PUG) of Giurgiu municipality, in subzone I1 - PRODUCTION, STORAGE ZONE where productive industrial and service activities are allowed.

On the eastern side, the industrial platform has a "protection zone" of the LM_2 housing function area, i.e. subzone I3 - PRODUCTION AND STORAGE SUBZONE WITH ADJACENT PROTECTED FUNCTIONS.

In accordance with the provisions of Art. 11 para. (1) of the Hygiene and Public Health Rules on the living environment of the population, approved by Order of the Minister of Health No. 119/2014, as amended, the *minimum health protection distance* ***between protected territories and the perimeter of establishments*** *causing discomfort and risks to the health of the population* is 500 m in the case of hazardous and non-hazardous waste incinerators.

The location of the project (perimeter of the unit) in relation to "protected areas" as defined in the act is more than 500 m away, taking into account the following aspects:

The mentioned normative act defines the terms "protected territory", which includes "living areas", also defined and "perimeter of the unit" as follows:

- ***protected territory*** - territory in which the maximum permissible concentrations of physical, chemical and biological pollutants in environmental factors may not be exceeded; it includes residential areas, parks, nature reserves, areas of balneoclimatic, rest and recreational interest, social-cultural, educational and medical institutions
- ***residential area*** - an area constituted as a functional grouping of territorially delimited lots and parcels of land **on which residential buildings predominate, with average housing density as a parameter of measurement**
- ***unit perimeter*** - the boundary of the land on which an objective is located and on which specific activities are carried out

The site plan below (Figure 26) shows the perimeter of the unit in Stereo 70 coordinates, from which 500 m radius circles have been drawn.

Figure 26 - Location of the project in relation to human settlements (Source: Google Earth)

The distance to the nearest dwelling (located on Drumul Cătunului Street) was also highlighted on the site plan as 535 (Figure 27).

Figure 27 - Housing area located in the south-east in relation to the project site

The dwellings at the end of Drumul Cătunului Street, towards the analysed site, are not in the "housing area" defined above, given that the "housing area", in the meaning of the normative act, implies the existence of several lots and plots delimited territorially on which residential buildings are built and predominate, having as a measurement parameter the average density of dwellings. In the area where the nearest dwelling to the project site is located, up to the 'housing area' (which includes the dwellings from the intersection of Drumul Cătunului and Cocorului Streets), there are only four dwellings on the lots and plots of land and vacant land predominates.

Consequently, the area in which the nearest dwelling is located in relation to the proposed project site does not fall within the legal definition.

The distance between the perimeter of the unit and the living area, within the meaning of the legal provisions, is 570 m.

Also, according to the provisions of Article 43 letter a) - "*Waste incineration plants shall meet the following conditions: a)* ***the location and establishment of the protection area shall be made following environmental and health impact studies***". For this reason, the Giurgiu Public Health Directorate has requested the preparation of a health impact study.

In order to be sure that the operation of the project will not generate a negative impact on the health of the population, neither directly nor cumulatively with other industrial objectives in the area, the National Institute of Public Health - Regional Center Iasi was asked to prepare a study in this regard, namely the ***"Study of impact assessment on health and comfort of the population"***.

They have delegated the competence of this study to SC Impact Sănătate SRL, a company accredited for this purpose by the Romanian Ministry of Health:

The conclusions of the "Study for the assessment of the impact on the health and comfort of the population" prepared by IMPACT SĂNĂTATE SRL Iași for the proposed project are as follows: "Corroborating the previous conclusions, we consider that the activities to be carried out within this investment objective will not negatively affect the comfort and health of the population in the area. We consider that the investment objective can have a positive socio-economic and administrative impact in the area, and any negative impact on the health of the population can be avoided by complying with the conditions listed [...] A perimeter fence of trees and shrubs (hedge) will be created around the site".

Consequently, the investment that will be implemented will in no way worsen the situation already existing and assumed by the inhabitants in the vicinity of the industrial platform.

We would like to point out that the "IMPACT ASSESSMENT STUDY ON THE HEALTH AND COMFORT OF THE POPULATION" has been checked and approved by the public health specialist, Mr. Ioan Chirilă who has a PhD in Medical Sciences, specialization Hygiene. He works at the National Institute of Public Health, CRSP Iasi where he is Coordinator / Collaborator of National Health Programmes; health impact assessment studies, and is also a very well-known name in the international health community!

With the measures to protect the environment and the health of the population that will be implemented and which will result in emissions below the emission limit values, odours perceived strictly in the area of the incinerator, perimeter curtain of trees and shrubs around the site, we believe that the investment will not cause discomfort to the inhabitants of the immediate area and even more so to the inhabitants of the Republic of Bulgaria.

The comments in our previous opinion No. 99-00-101, 04-00-1311/27.11.2023 have not been addressed and taken into account also due to the lack of an adequate health risk assessment, insufficient quantitative and qualitative measures to prevent negative impacts in the implementation of the IP, lack of assessment of cumulative effects and considering that the protection of citizens' health is a national priority that exceeds the interests of individual citizens and/or commercial entities.

Answer:
See the answer to the previous question.

The expert team that prepared the report should have distinguished between AQA (ambient air quality) and IP impacts on AQA and human health impact assessment when assessing effects.

Answer:
The analysis of the impact of the project operation on the air factor (through the emissions it generates in the atmosphere) was carried out in the Environmental Impact Report for all aspects, i.e. on air quality and human health:

In Giurgiu county air quality is monitored by 4 stations, integrated in the National Air Quality Monitoring Network and two DOAS stations. These stations are equipped to collect, process, transmit data and inform the public on ambient air quality.

They are located as follows:

1. GR1 - traffic station located on Bucharest Road, at the entrance to Giurgiu municipality, being convenient in terms of traffic flow. It is monitored:
   a. sulphur dioxide (SO2);
   b. nitrogen oxides (NO/NOx/ NO2);
   c. carbon monoxide (CO);
   d. volatile organic compounds (VOCs);
   e. particulate matter (PM10);
   f. lead (Pb)

2. GR2 - urban background station, located in the Students Park, adjacent to Transylvania Street, located in an area not directly exposed to local traffic and industry. It is monitored:
   a. sulphur dioxide (SO2);
   b. nitrogen oxides (NO/NOx/ NO2);
   c. carbon monoxide (CO), ozone(O3);
   d. volatile organic compounds (VOCs);
   e. particulate matter (PM10);
   f. lead (Pb);
   g. weather parameters.

3. GR3 - industrial station located in the yard of the Meteo Giurgiu station, located in an industrial area that includes the thermoelectric power plant of the Municipality of Giurgiu. It is monitored:

a. sulphur dioxide (SO2);
b. nitrogen oxides (NO/NOx/ NO2);
c. carbon monoxide (CO);
d. particulate matter (PM10);
e. lead (Pb);
f. weather parameters.

4. GR4 - rural, sub-regional level station, located in the village of Braniștea, Oinacu commune, remote from all major pollution sources. It is monitored:

a. sulphur dioxide (SO2);
b. nitrogen oxides (NO/NOx/ NO2);
c. carbon monoxide (CO),
d. ozone(O3);
e. volatile organic compounds (VOCs);
f. particulate matter (PM2.5);
g. weather parameters.

Station code	Type of station	Address	Contact details		Pollutants monitor	Features stations
			Latitude (N)	Longitude (N)		
RO030501G1	Traffic station	Giurgiu, Sos. Bucharest, entrance to the city	43° 54'41.21"	25° 58'19.40"	• SO_2 , • NO/NO / NO_{x2} , • CO, • BETX, • PM_{10} , • Pb	residential and commercial
RO030502G2	urban background station	Giurgiu, Students Park, adjacent str. Transylvania	43° 53'43.95"	25° 57'23.61"	• SO_2 , • NO/NO / NO_{x2} , • CO, • O_3 , • BETX, • PM_{10} / $PM_{2,5}$, • Pb • parameters • weather	residential and recreation
RO030503G3	industrial station	Giurgiu, Sos. Sloboziei, weather station	43° 52'31.57"	25° 55'54.24"	• Y / NO / NO_{x2} , • CO, • PM_{10} , • Pb • weather parameters	Industrial
RO030504G4	rural background station of sub-regional level	School in Braniștea village, commune Oinacu	43° 57'48.29"	26° 02'12.96"	• SO_2 , • NO/NO / NO_{x2} , • CO, • O_3 , • BETX, • $PM_{2,5}$ • weather parameters	Residential located at distance from all sources pollution enhancement

Giurgiu County has developed, at the request of Giurgiu County Council, the "AIR QUALITY MAINTENANCE PLAN IN GIURGIU COUNTY". In this plan it is specified that "According to Order 1206/11.08.2015 Annex 2, Giurgiu County is classified in management regime II, area in which:

- **Levels of SO_2 , NO_2 , NO_x , PM_{10} and $PM_{2,5}$, Pb, C H_{66} , CO are below the limit values set out in letter B and heading G5 Annex no. 3 Law 104/2011**

- **Levels of As, Cd, Ni, $PM_{2,5}$ are lower than the target values set out in point (a). C and heading G4 - Annex No 3.**

The plan also states that "The county's air quality monitoring system enables air quality to be monitored continuously and the necessary measures to be taken in the event of major exceedances in order to protect human health and the environment".

According to the study that was the basis for the elaboration of the "AIR QUALITY MAINTENANCE PLAN IN GIURGIU COUNTY", the following aspects were analysed:

A. the variation of atmospheric concentrations in immission for important air pollutants (including pollutants that will be emitted into the atmosphere during the operation of the project under consideration)
B. number of exceedances of permissible limit values
C. frequency of overruns
D. average concentrations in immission for the shortest averaging intervals, those which may negatively influence the health of the population in the area
E. the maximum value of the concentrations in immission for the shortest averaging intervals, those which may adversely affect the health of the population in the area
F. the ratio of the values obtained to the maximum permissible values

The results of this study are presented below (the data are taken in full from the "AIR QUALITY MAINTENANCE PLAN IN GIURGIU COUNTY" which is available on the Giurgiu County Council website):

Sulphur dioxide

Concentrations of SO_2 were slightly elevated during the cold period of the year (January - March and November - December respectively), but no exceedances of the hourly limit value and the daily limit value for the protection of human health were recorded.

Table 3-1 1h averaging data processing - SO_2

Station	No. of valid data	% valid data	Number of exceedances %	Exceedance frequency (%)	Average ($\mu g/m^3$)	Maximum ($\mu g/m^3$)	Average hourly value for health protection
GR-1	8272	94.4	0	0	20.42	32.14	350 $\mu g/m^3$
GR-2	7993	91.2	0	0	15.83	43.76	
GR-3	8257	94.2	0	0	9.01	13.42	
GR-4	7821	89.2	0	0	14.89	23.56	

Figure 3-1 Hourly average SO_2

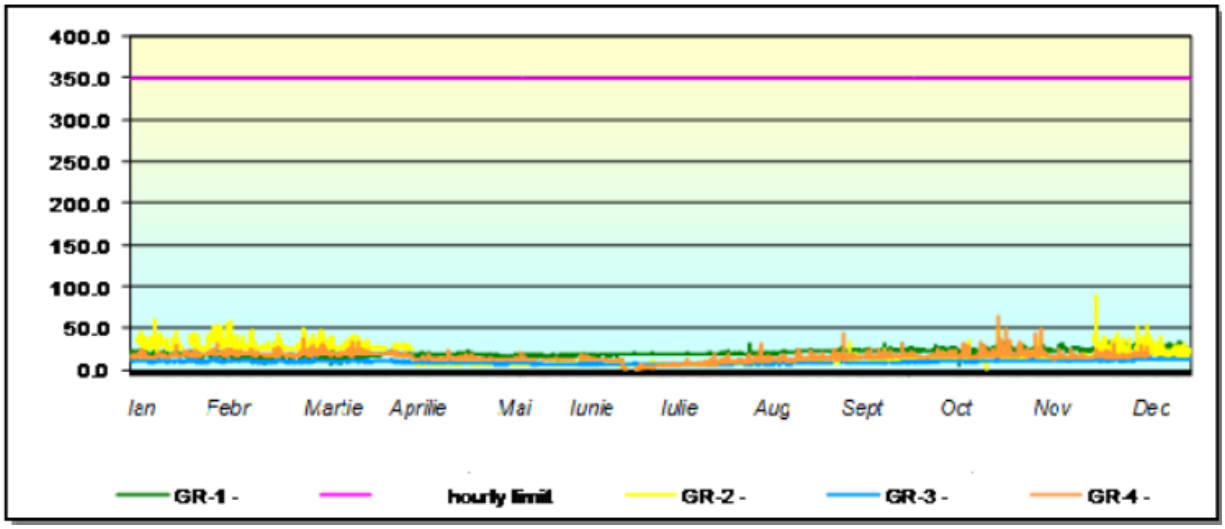
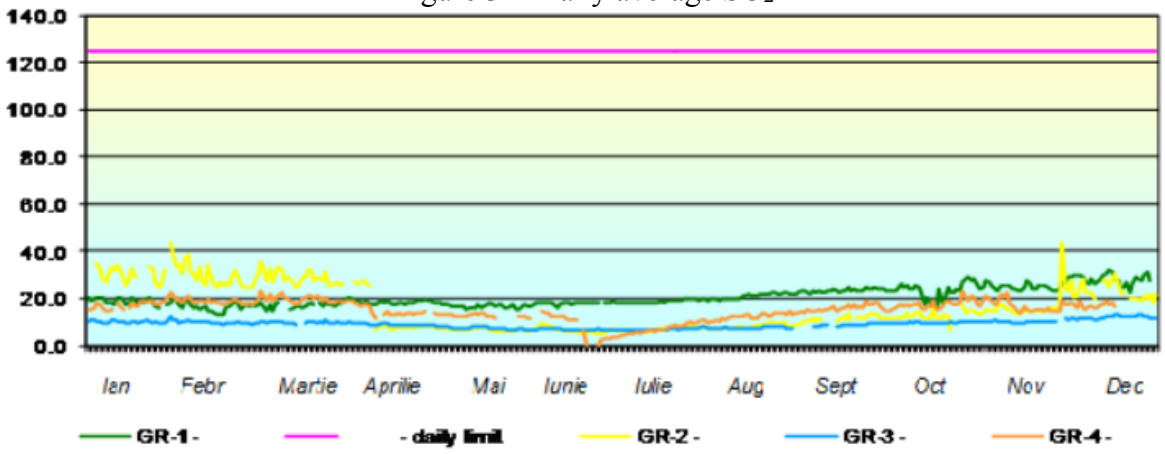


Figure 3-2 Daily average SO_2



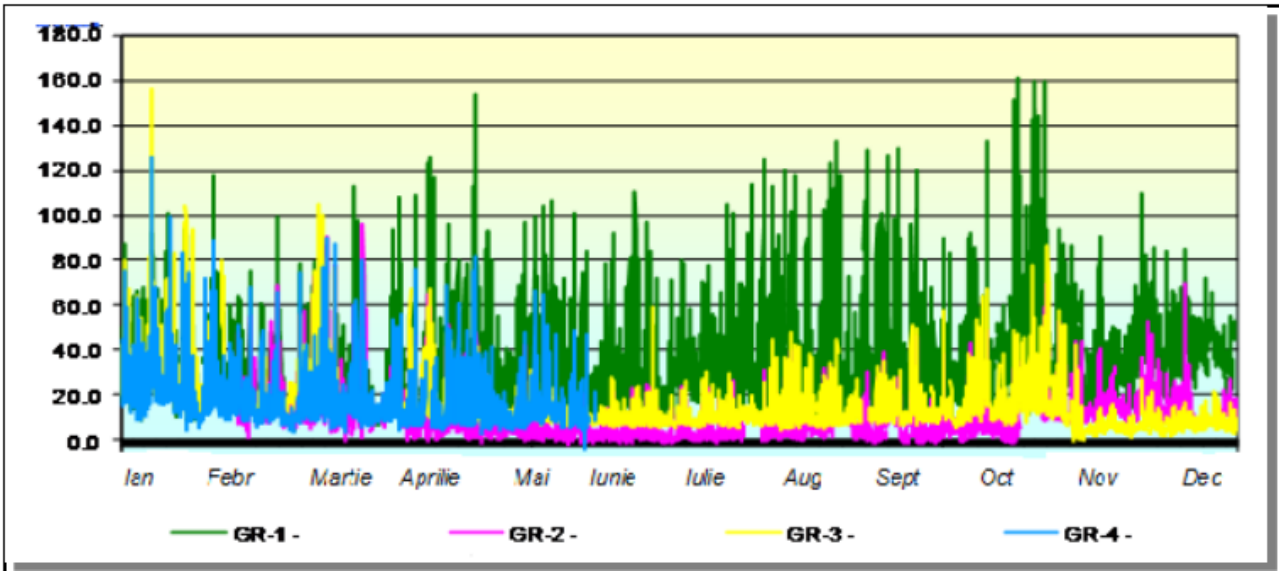
Nitrogen dioxide

For nitrogen dioxide, neither the hourly limit value for the protection of human health nor the annual limit value of 40 µg/m³ were exceeded at any of the stations in Giurgiu County.

Table 3-2 Processing of 1h averaged data - NO2

Station	No. of valid data	% valid data	Number of exceedances %	Exceedance frequency (%)	Average (µg/m³)	Maximum (µg/m³)	Average hourly value for health protection
GR-1	8091	92.3	0	0	32.48	61.01	200 µg/m³
GR-2	6572	75.0	0	0	10.20	35.11	
GR-3	7295	83.2	0	0	15.77	69.72	
GR-4	3502	39.9	0	0	18.19	52.19	

Figure 3-3 Hourly average NO2



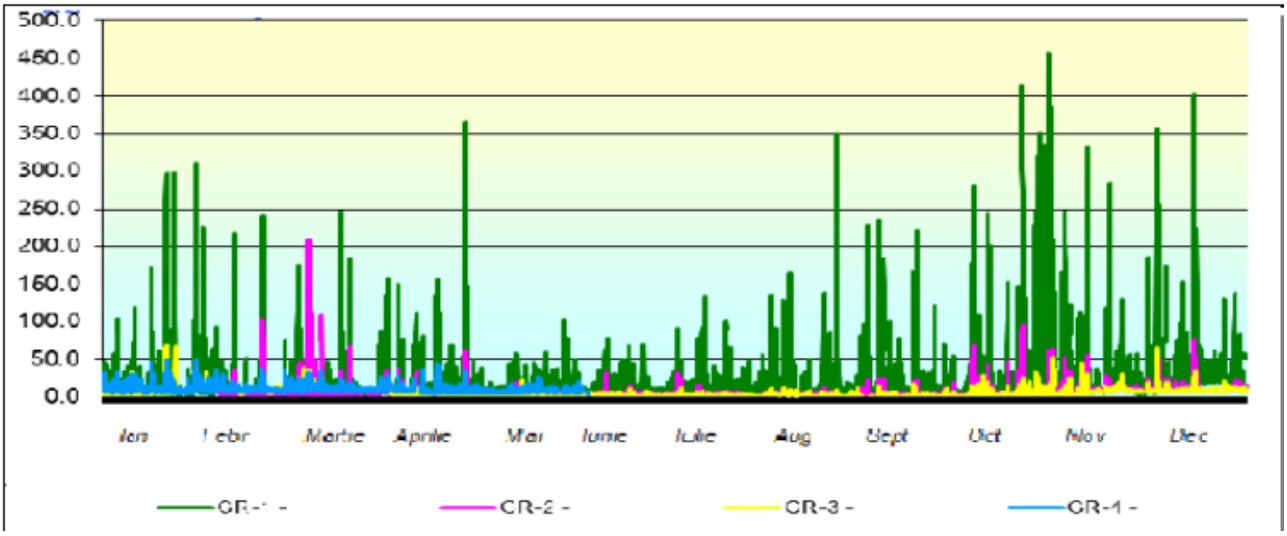
Nitric oxide

No limit value is defined for nitrogen monoxide. This indicator is monitored as it is one of the precursors of ozone.

Table 3-3 Processing of 1h averaging data - NO

Station	No. of valid data	% valid data	Number of exceedances %	Exceedance frequency (%)	Average (µg/m^3)	Maximum (µg/m^3)	Average hourly value for health protection
GR-1	8272	94.4	*	*	20.42	158.9	
GR-2	7993	91.2	*	*	15.83	36.46	
GR-3	8257	94.2	*	*	9.01	19.71	
GR-4	7821	89.2	*	*	14.89	22.05	

Figure 3-4 Hourly average NO



Particulate matter - PM_{10}

In gravimetric measurements of particulate matter, PM10 fraction at 2 of the 4 stations monitored, 11 exceedances of the limit value were recorded.

Figure 3-5 Daily average concentrations PM_{10} non-phelometric method

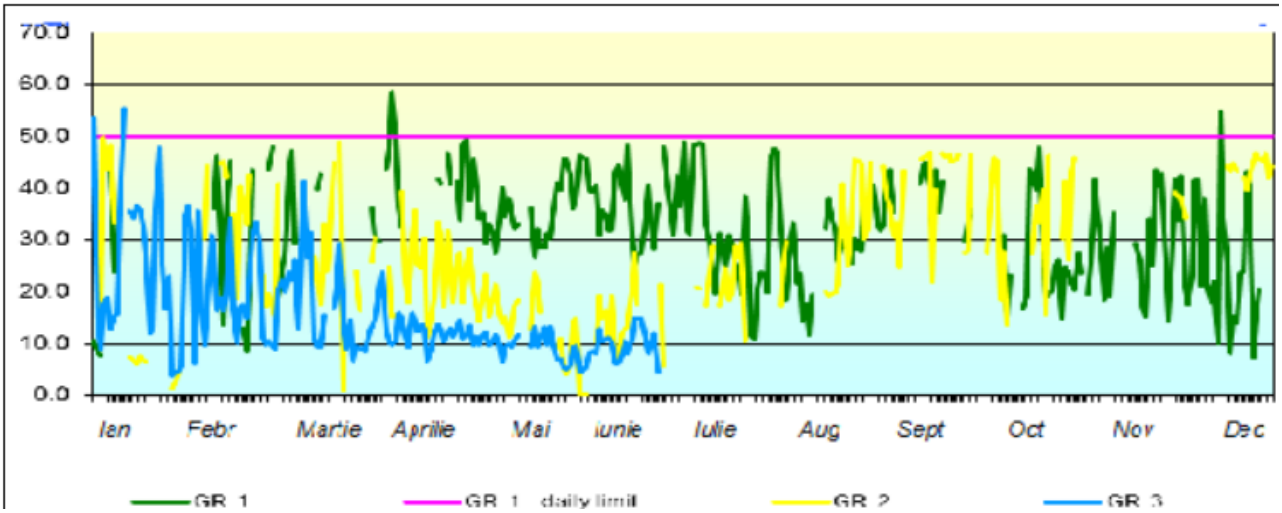
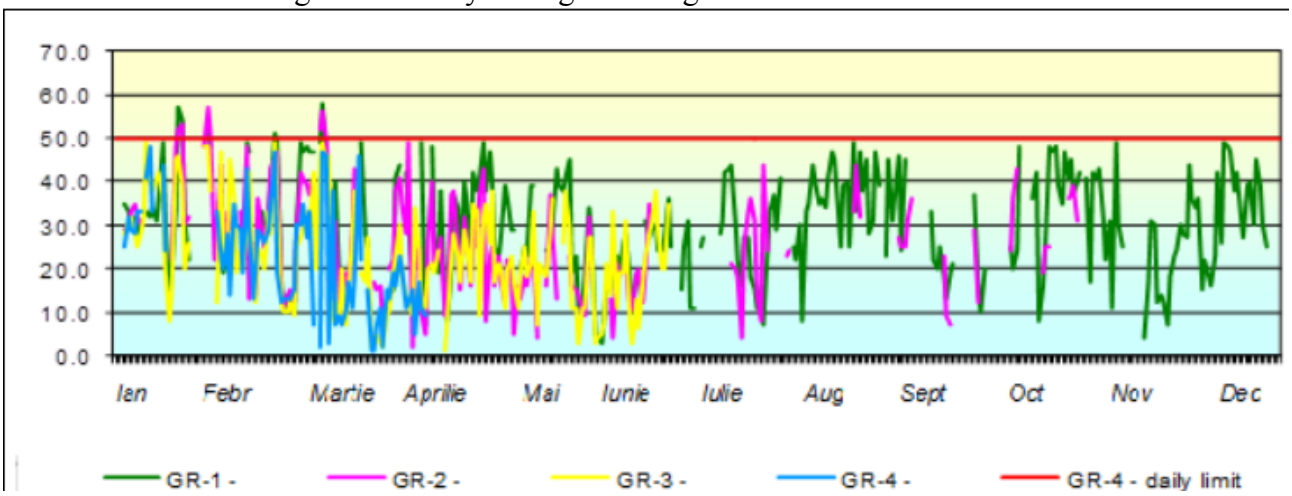


Table 3-4 Gravimetrically measured particulate matter - PM_{10} gravimetrically

Station	No. of valid data	% valid data	Number of exceedances %	Exceedance frequency (%)	Average (µg/m³)	Maximum (µg/m³)	Average hourly value for health protection
GR-1	284	77.8	5	1.76	30.22	58	50 mg/m3
GR-2	180	49.3	6	3.33	26.16	57	
GR-3	163	44.6	0	0	23.09	49	
GR-4	76	20.8	0	0	22.11	48	

Figure 3-6 Daily average PM10 gravimetric concentrations



Particulate matter - $PM_{2,5}$

The annual limit value at $PM_{2,5}$ was not exceeded.

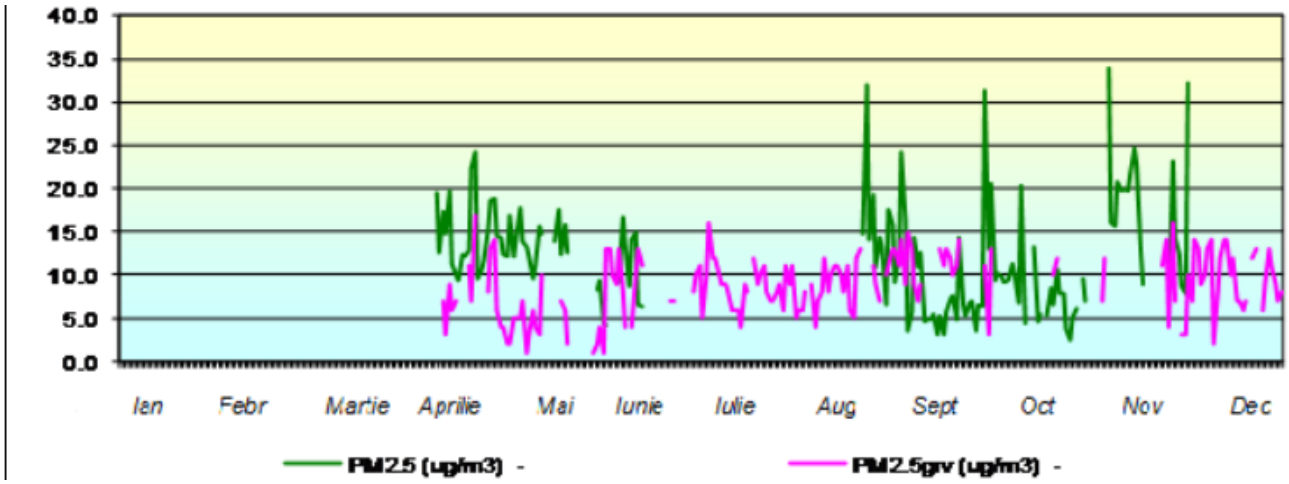
Table 3-5 Non-phelometrically measured particulate matter - $PM_{2,5}$

Station	No. of valid data	% valid data	Average (µg/m³)	Maximum (µg/m³)	Annual limit value (µg/m³)
GR-4	143	39.1	12.20	33.97	25

Table 3-6 Gravimetrically measured particulate matter - $PM_{2,5}$ gravimetrically

Station	No. of valid data	% valid data	Average (µg/m³)	Maximum (µg/m³)	Annual limit value (µg/m³)
GR-4	172	47.3	8.79	17	25

Figure 3-7 Daily average PM2.5 concentrations - station GR 4



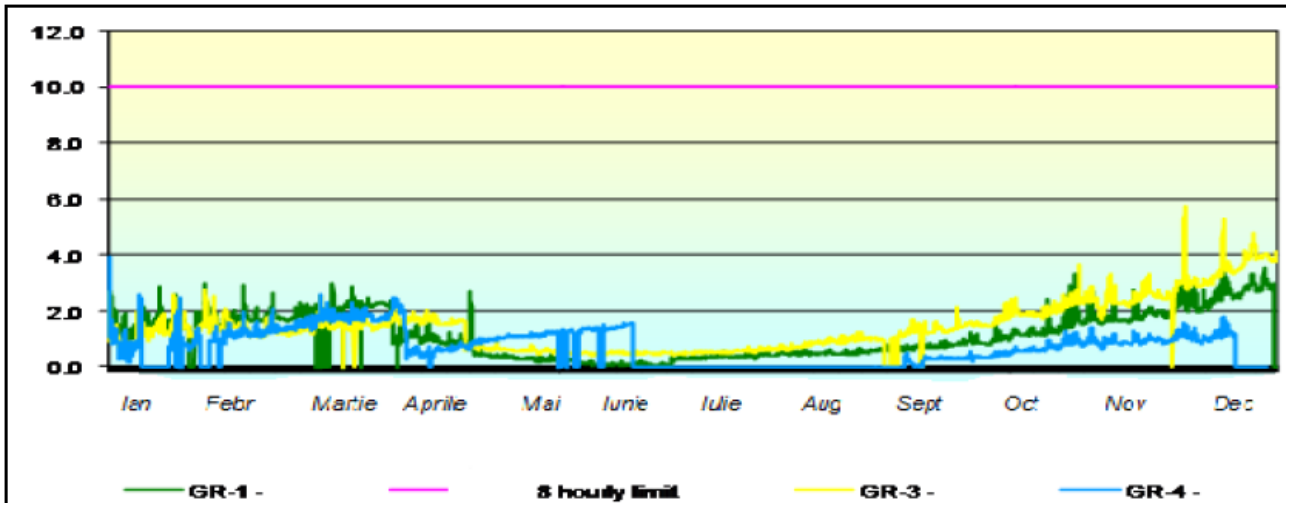
Carbon monoxide

Higher values were recorded at station GR1 - traffic station, but the limit value was not exceeded.

Table 3-7 Processing of hourly average data (8-hour rolling) - CO

Station	No. of valid data	% valid dates	Number of exceedances (> VL)	Frequency of exceedances (%)	Average (µg/m3)	Maximum (µg/m3)	Limit value for health protection
GR-1	8186	93.4	0	0	1.15	3.54	10 mg/m³
GR-3	8574	97.8	0	0	1.44	5.76	
GR-4	5635	64.3	0	0	5.76	3.96	

Figure 3-8 8h hourly averaged concentrations - CO



Lead

Table 3-9 Data processing

Station	No. of valid data	% valid dates	Average (µg/m3)	Annual limit value
GR-1	284	77.8	0.004	0.5 µg/m3
GR-2	180	49.3	0.00325	

GR-3	163	44.6	0.003
GR-4	76	20.8	0.0035

It should be noted that the project under consideration is within the analysis area of the GR-3 monitoring station and the comparative interpretation of the pollution potential generated by the atmospheric emissions that will be produced during the incinerator's operating phase will be made by referring to the values recorded at this station.

The analysis will be made below both comparatively and cumulatively for the points located at the boundary of the project site where the concentrations of pollutants in emissions are at their maximum value, the values of these concentrations decreasing steeply with distance from the site and with proximity to the border between Romania and the Republic of Bulgaria:

Table 28Cumulative values of pollutants monitored at stations GR-3 and GR-4 with pollutants from incinerator operation

Monitoring station	Mediation period	Media (µg/m³)	Maxima (µg/m³)	Modelled value at the boundary of the incinerator site	Average + influence of the incinerator in the operating stage at the	Maxima + influence of the incinerator in the operating	Limit value for the protection of the health of	Conclusions
SO_2								
GR-3	1 h	9.01	13.42	0.04	9.05	13.46	350 µg/m³	• Incinerator activity does not negatively influence air quality in the vicinity • Cumulative values are
NO_2								
GR-3	1 h	15.77	69.72	1	16.77	70.72	200 µg/m³	• negatively influences the air quality in the immission • Cumulative values are
CO								
GR-3	8 h	1.44	5.76	0,0004	1.4404	5.7604	10 mg/m³	• negatively influences the air quality in the immission • Cumulative values are

Table 29 Cumulative values of pollutants monitored at stations GR-3 and GR-4 with pollutants resulting from incinerator operation at the border between Romania and the Republic of Bulgaria and at the northern border of Ruse

Monitoring station	Mediation period	Media (µg/m)^3	Maxima (µg/m)^3	Modelled value at the border between Romania and the Republic of Bulgaria (µg/m^3)	Modelled value at the northern boundary of Ruse (µg/m^3)	Average influence of Giurgiu city activity + influence of the incinerator in the operating stage at the	Maximum influence of Giurgiu's activity + influence of the incinerator in the	Limit value for the protection of the health of the population	Conclusions
	SO_2								
GR-3	1 h	9.01	13.42	0.02	0.02	9.03	13.44	350 µg/m^3	• Incinerator activity does not negatively influence air quality in the vicinity • Cumulative values
	NO_2								
GR-3	1 h	15.77	69.72	0.4	0.4	16.17	70.12	200 µg/m^3	• negatively influences the air quality in the immission
	CO								
GR-3	8 h	1.44	5.76	0.0001	0.0001	1.4401	5.7601	10 mg/m^3	• negatively influences the air quality in the immission

CONCLUSIONS

The activity of the incinerator will have no negative influence on the air quality, neither in the area in the immediate vicinity of the site, nor in the area of Giurgiu and even less at the border between Romania and the Republic of Bulgaria or at the northern border of Ruse!

The EIA does not analyse possible emergencies that may arise, including possible environmental consequences. No measures are proposed to prevent serious environmental pollution. It is not clear how a possible accident would be remedied - what to do if air pollution were to occur.

Answer:

These issues have been considered with great care and professionalism in the Environmental Impact Report and the answers given to similar questions in the 2 previous requests for clarification and/or completeness were very detailed and to the point.

For situations where incinerator malfunctions occur, they will be reported in advance by the automated monitoring system, in which case the procedural steps below apply:

1. the supply of waste to the primary chamber is stopped (continuous supply system)
2. the incineration process is completed for the entire quantity of waste in the primary combustion chamber
3. the LPG supply to the combustion system in the 2 chambers of the incinerator is switched off
4. 2 chambers of the incinerator are allowed to cool
5. the fault will be identified and the technical repair solution and working procedure will be determined
6. malfunction is rectified
7. the incinerator is restarted following the start-up procedure in the technical book

In this situation, no pollutants are emitted into the atmosphere at levels above those typical of normal operation.

In the event of a fault in the electricity supply to the site, the following procedural steps shall be followed:

- automatically starts the electric generator
- the supply of waste to the primary combustion chamber is stopped
- the incineration of existing waste in the primary chamber will be completed
- the procedure for shutting down the incinerator is initiated
- the power grid is expected to come back on
- check the technical condition of the incinerator and restart it following the procedural steps in the technical book.

The running time of the generator will be limited by the time of completion of the incineration of the waste in the primary chamber at that time (with the waste supply switched off) after which it will stop waiting for the power supply to return from the grid. As such the amount of exhaust gas generated will be reduced. Combined with the minimum EURO 5 pollution level of the thermal engine with which the generating set will be equipped, the quantities of pollutants emitted into the atmosphere during operation of the generating set will be very low and without significant negative impact on the environmental factor air."

The measures for the avoidance, prevention and mitigation of adverse effects in the event of accidents, which are included in the EIA, derive from the regulatory requirements for all projects

and are general and declaratory in nature. Such measures do not include measures to ensure the continuous, correct and trouble-free operation of flue gas treatment plants. It is essential that all treatment plants comply with the emission limit values throughout the operating period.

Answer:

Both in the Environmental Impact Report and in the replies to similar questions in the 2 previous requests for clarification and/or completeness, all these measures have been analysed in detail.

Measures to avoid, prevent and mitigate adverse effects in the event of accidents for any type of installation always derive primarily from regulatory requirements.

The IR 1000-300 incinerator is equipped with a continuous monitoring system of operating and combustion parameters and will fully comply with the BAT requirement "Use of an automatic computerised control system to control combustion efficiency and support emission prevention and/ or reduction. The use of high-performance monitoring of operating parameters and emissions is also included".

Throughout the analysis and assessments in the Environmental Impact Report, the situations of occurrence of malfunctions or possible accidents were analysed and modes of action were presented as well as the fact that the technology to be used, the automation system as well as the safety system will prevent the operation of the plant outside the normal parameters.

Page 27:

"*Dry" flue gas cleaning/washing system*

This system includes:

a) - flue gas cooling system;

b) - the flue gas cleaning system, of the "dry absorbing system" type;

c) - dry particle filtration system;

d) - exhaust fan for exhausting combustion gases;

e) - flue gas chimney and chimney connection.

The flue gas is introduced in a controlled and directed way into the flue gas cleaning system, of the "dry absorbing system" type, in a reactor, specially dimensioned for this purpose, where the Solvay-Bicar mixture (NaHCO3 mixed with activated carbon) is injected through a nozzle. when it meets the flue gas with the sorbent in the powder phase in suspension and combines as the chemical reaction of pollutant absorption takes place, resulting in a powder which is then collected in the lower part of the reactor without the need for additional drying of the depollutant. The installation of such a system for the removal of pollutants from the flue gas by means of a dry absorbing system is designed and dimensioned to limit the discharge of pollutants and dust particles into the atmosphere in such a way as to comply with emissions into the atmosphere in accordance with the legislation in force (GD 128/2002, supplemented and updated with GD 268/2005).

In the event of abnormal operation of the gas flushing system which may lead to malfunctions, the electronic monitoring system will signal a potential malfunction in good time and the necessary remedial measures will be taken.

Following the flue gas cleaning system, the dry filter system and then the exhaust will be installed.

The dry particle filtering system is equipped with a bag filter.

Technical features are:

- filtered flow 5000 m /h^3
- filtered surface 360 m^2
- type of filter material filter bags made of FNS® (P84, glass fibre,

PTFE)

- maximum operating temperature T max.(continuous) = 190 C^o
- pressure drop 50-150 mmH_2O.

The dry particle filtration system consists of a 144-bag filter, which is cleaned with counter-current air, resulting in a filtered air flow of 10000 m^3/h. This flow rate is calculated to take up the load peaks that occur when the incineration process starts. At this point any volatile fractions in the waste to be incinerated ignite almost instantaneously and generate a volume of flue gas above the working flow rate of 5000 m^3 /h. The duration of the phenomenon is very short, in the order of 1 to 5 minutes, after which the normal working flow returns.

The life of a filter bag is 6000 hours after which it must be replaced.

Exhauster for flue gas exhaust

Technical characteristics for the flue gas exhaust are:

- centrifugal fan type T_{max} = 350° C (with cooling fan) with electric motor
- Suction/discharge dimensions: Ø 406 mm / 355 x 250 mm.

The exhaust system for the flue gas discharge consists of a centrifugal fan with cooling fan, which has a flow rate of 10000 m^3/h. This flow rate has been dimensioned to take up the load peaks that occur at the start of the incineration process (see paragraph above)."

Pages 86-87:

"In the event of a breakdown leading to an emergency shutdown of the incinerator (which is highly unlikely) the operating protocol will include the following phases:

1. when the incinerator stops suddenly (due to a malfunction) the LPG supply to the burners will automatically stop (process coordinated and controlled by the process computer-aided automation system). In this case the combustion process will also stop, which will stop the flue gas generation process.
2. the 2 combustion chambers are let to cool down
3. all flue gases that will be released before the combustion chambers cool down will pass through the gas scrubber and filter system and then be discharged into the atmosphere through the incinerator stack. The quantities of such gases will be very small and without impact on the environmental factor air
4. the cause of the stoppage is determined, the fault is identified and the technical measures to remedy the fault are determined. the combustion chambers (primary and/or secondary) will only be opened if absolutely necessary. Taking into account the construction and operating principle of the incinerator, it is unlikely that a fault will occur inside one of the two combustion chambers that would lead to an abrupt shutdown of the incinerator.
5. after the fault has been rectified, the condition of the system and of the entire incinerator is checked by computer diagnosis, after which the incinerator is restarted in accordance with the start-up procedure in the technical book

No mathematical model was presented for the spread of emissions under cumulative effect conditions with other sources of organised emissions, which we consider to be an important omission in the Environmental Impact Report. Not all air pollutants on both sides of the Danube are comprehensively addressed, which makes the report incomplete and does not provide reliable data on the overall magnitude and coefficient of transboundary pollution. Given that Ruse is home to industries mainly in the chemical, metals, oil refining, automotive and ceramics industries, the conclusions drawn are unfounded and unacceptable. All mathematical predictions are based on some data base, but in practice it cannot be guaranteed that there will be no pollution.

Answer:

Only those pollutants that can be generated from the incinerator activity have been analysed in the Environmental Impact Report, which is correct and normal.

Bearing in mind the following:

A. the immission concentration values for all pollutants that will be generated in the atmosphere during operation - these **are extremely low compared to the permissible limit values**:

1. CO - the values recorded for concentration in immission at the border between Romania and the Republic of Bulgaria as well as at the Romanian border of Ruse are well below the lower threshold values for human health. Thus, we have:

c. at the border between Romania and the Republic of Bulgaria - **value 166666 (one hundred and sixty-six thousand six hundred and sixty-six) times lower threshold value**

d. Romanian border of Ruse - **value 166666 times lower threshold value**
The impact of the operation of the incinerator on the health of the inhabitants of the city of Ruse will be neutral.

2. NO_2 - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the upper human health threshold.

c. at the border between Romania and the Republic of Bulgaria:

- one hour averaging period - **value 500 (five hundred) times lower than the permissible limit value**
- mediation period one year - **value of forty thousand (40,000) times less than the admissible limit value**

d. the Romanian border of Ruse - **value of 40 000 (forty thousand) times lower than the permissible limit value**

- one hour averaging period - **value 500 (five hundred) times lower than the permissible limit value**
- mediation period one year - **value of 40 000 (forty thousand) times less than the admissible limit value**

The impact of the operation of the incinerator on the health of the inhabitants of the city of Ruse will be neutral.

3. SO_X - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the limit values for the 1 h averaging period and the lower threshold values for the 24 h averaging period (related to human health).

c. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 17500 (seventeen thousand five hundred) times lower than the admissible limit value**
- 24-hour averaging period - **value 50,000 (fifty thousand) times lower than the permissible limit value**

d. the Romanian border of Ruse

- mediation period one hour - **value 17500 (seventeen thousand five hundred) times lower than the admissible limit value**
- averaging period 24 0re - **value 50 000 (fifty thousand) times lower than the admissible limit value**

The impact of the operation of the incinerator on the health of the inhabitants of the city of Ruse will be neutral.

4. TSP - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the lower threshold values for the 1 h averaging period and the lower threshold values for the 24 h averaging period (related to human health).

c. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 25000 (twenty-five thousand) times lower threshold value**
- 24-hour averaging period - **value 33333 (thirty-three thousand three hundred and thirty-three) times lower threshold value**

d. the Romanian border of Ruse

- mediation period one hour - **value 25000 (twenty-five thousand) times lower threshold value**
- 24-hour averaging period - **value 33333 (thirty-three thousand three hundred and thirty-three) times lower threshold value**

The impact of the incinerator operation on the health of Ruse residents will be neutral

5. HCl - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the lower threshold values for human health.

c. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 1733333 (one million seven hundred and thirty-three thousand three hundred and thirty-three) times lower threshold value**

d. the Romanian border of Ruse

- mediation period one hour - **value 1733333 (one million seven hundred and thirty-three thousand three hundred and thirty-three) times lower threshold value**

The impact of the incinerator operation on the health of Ruse residents will be neutral

6. HF - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the lower threshold values for human health.

c. at the border between Romania and the Republic of Bulgaria

- mediation period one hour - **value 8000000 (eight million) times lower threshold value**

d. the Romanian border of Ruse

- mediation period one hour - **value 8000000 (eight million) times lower threshold value**

The impact of the incinerator operation on the health of Ruse residents will be neutral

7. dioxins and furans - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the minimum recommended values for human health.

e. at the border between Romania and the Republic of Bulgaria

- averaging period 8 hours - **value 33.33 (thirty-three) times lower than the recommended minimum values**

f. the Romanian border of Ruse

- averaging period 8 hours - **value 42.85 (approximately forty-three) times lower than the recommended minimum values**

  The impact of the incinerator operation on the health of Ruse residents will be neutral

B. cumulative values of pollutants monitored by the National Air Quality Monitoring System through the 4 monitoring stations located in Giurgiu city and Giurgiu county, at the border between Romania and the Republic of Bulgaria and at the northern border of Ruse city

: cumulative values of pollutants monitored at stations GR-3 and GR-4 with pollutants resulting from the operation of the incinerator at the border between Romania and the Republic of Bulgaria and at the northern border of the city of Ruse

Monitoring station	Mediation period	Media (µg/m³)	Maxima (µg/m³)	Modelled value at the border between Romania and the Republic of Bulgaria (µg/m³)	Modelled value at the northern boundary of Ruse (µg/m³)	Average influence of Giurgiu city activity + influence of the incinerator in the operating stage at the	Maximum influence of Giurgiu's activity + influence of the incinerator in the	Limit value for the protection of public health	Conclusions
	SO_2								
GR-3	1 h	9.01	13.42	0.02	0.02	9.03	13.44	350 µg/m³	• Incinerator activity does not negatively influence air quality in the vicinity • Cumulative values
	NO_2								
GR-3	1 h	15.77	69.72	0.4	0.4	16.17	70.12	200 µg/m³	• negatively influences the air quality in the immission
	CO								
GR-3	8 h	1.44	5.76	0.0001	0.0001	1.4401	5.7601	10 mg/m³	• negatively influences the air quality in the immission

The quantitative and qualitative analysis carried out as part of the study covered all these requirements related to the potential transboundary impacts of incinerator operation. In practice it has been very clearly demonstrated with scientific arguments that there will be no transboundary impact from the operation of the incinerator under review.

Given that Ruse is home to industries mainly in the chemical, metals, oil refining, automotive and ceramics industries, the conclusions drawn are unfounded and unacceptable.

Answer:

Taking into account the fact that the immission concentration values for all the pollutants that will be generated in the atmosphere during operation, both at the border between Romania and the Republic of Bulgaria and at the northern border of Ruse, are extremely low compared to the permissible limit values, the only situations in which the cumulative values could exceed the limit values laid down in the European legislation would be those in which the cumulative values of industrial installations on the territory of the Republic of Bulgaria would exceed the permissible limit values, in which case it is necessary to intervene in the regulation of the operation of these installations. If such situations were to arise, the negative cross-border impact would be generated by industrial installations on the territory of the Republic of Bulgaria towards the citizens of Romania!

All mathematical predictions are based on some database, but in practice it cannot be guaranteed that there will be no pollution.

Answer:

If a project is at the implementation stage, it must go through the procedural steps provided for in L 292/2018 which transposes the European directives. In the case of such projects, the analysis of the impact of their operation on environmental factors and on the health of the population can only be done on the basis of mathematical analyses based on nationally and European approved software.

The commissioning of an incineration plant is only after obtaining an environmental permit which has clear provisions on the operating parameters of the plant and the methods of monitoring environmental factors, the frequency of monitoring and the elements to be monitored.

With regard to the statement "*in practice it cannot be guaranteed that there will be no pollution"* we make the following comments:

1. in practice, operating conditions are imposed by the environmental permit and legislative provisions to ensure that the operation of an authorised installation will not lead to situations where "pollution" occurs
2. if this principle were to be applied to any new plant to be commissioned, it would mean that no new plants would be implemented, that any technological progress would be halted and that only plants which are morally and physically old and which over time generate much more pollution than those new plants would remain in operation!

There is a potential for the operation of the incinerator to directly or indirectly affect public health, but the circumstances described above do not allow an assessment of the degree of significance of the health risk that this IP would generate for the population of the Municipality of Ruse.

Answer:

It has been explained in great detail, both in the Environmental Impact Report and in the replies to the two previous addresses, that the operation of the incinerator will not have negative effects on the health of the population in the vicinity of its site, and even less so on the inhabitants of the Republic of Bulgaria.

Moreover, for this project, the National Institute of Public Health - Regional Center Iasi was asked to prepare a study in this regard, namely the ***"Study to assess the impact on health and comfort of the population"***. They have delegated the competence of this study to SC Impact Sănătate SRL, a company accredited for this purpose by the Romanian Ministry of Health:

The conclusions of the "Study for the assessment of the impact on the health and comfort of the population" prepared by IMPACT SĂNĂTATE SRL Iași for the proposed project are as follows: "Corroborating the previous conclusions, we consider that the activities to be carried out within this investment objective will not negatively affect the comfort and health of the population in the area. We consider that the investment objective can have a positive socio-economic and administrative impact in the area, and any negative impact on the health of the population can be avoided by complying with the conditions listed [...] A perimeter fence of trees and shrubs (hedge) will be created around the site".

Consequently, the investment that will be implemented will in no way worsen the situation already existing and assumed by the inhabitants in the vicinity of the industrial platform.

We would like to point out that the "IMPACT ASSESSMENT STUDY ON THE HEALTH AND COMFORT OF THE POPULATION" has been checked and approved by the public health specialist, Mr. Ioan Chirilă, who has a PhD in Medical Sciences, specializing in Hygiene. He works at the National Institute of Public Health, CRSP Iasi where he is Coordinator / Collaborator of National Health Programmes; health impact assessment studies, and is also a very well-known name in the international health community!

Moreover, the Ministry of Health - Directorate of Public Health Giurgiu issued for the operation of the incinerator under consideration the document "NOTIFICATION ON COMPLIANCE WITH LEGALITY REGARDING HYGIENE AND PUBLIC HEALTH STANDARDS" which confirms that its operation will not generate negative effects on the health of the population, neither in Romania nor in the Republic of Bulgaria!

In view of the above, we consider that the additional information submitted does not demonstrate a reasonable minimum risk of emissions to ambient air in a transboundary context.

The information in the Contracting Authority's comments in the IP is considered to be unsatisfactory with regard to the issues mentioned in our previous opinion and, as a result, a positive opinion cannot be expressed in the EIA procedure in a cross-border context.

Ruse's civil society continues to be extremely sensitive and against the project. Protests have been organised against the project, petitions and negative opinions have been filed against its implementation. All of this is due to public concern for the protection of clean air and opposition to the implementation of projects associated with the potential release of harmful emissions and effects on environmental components and endangering human health.

By this letter I would also like to inform you that by Resolution no. 1445, enacted by Protocol no. 51/11.09.2023 of the Municipal Council of the City of Ruse, a declaration was enacted

on the construction of an incinerator for the incineration of hospital waste in the Municipality of Giurgiu. Through this Decision, the Ruse Municipal Council expresses its categorical disagreement with the implementation of the project "Construction of a hall building, concrete drainable basin, concrete platforms, fencing, lighting system, execution of drilling and internal network for water supply and sewerage, location of wastewater pre-treatment station, location of medical waste incinerator with annexed facilities" in the Municipality of Giurgiu. The Municipal Council declares that the opinion of the local population is of priority importance for the solution of local security and health care problems in the Municipality of Ruse. The information needs to be revised and completed to be in line with European legislation. These should be accompanied not only by a response to the questions and comments presented in this address, but also by the revised EIA Report in both English and Bulgarian.

In conclusion and taking into account all the above, the Republic of Bulgaria expresses a negative opinion on the information presented in the report due to the lack of adequate health risk assessment, insufficient quantitative and qualitative measures to prevent negative impacts of IP implementation, considering that the protection of citizens' health is the most important national priority. We confirm the opinion of the Republic of Bulgaria, expressed in the previous opinion, that it is essential to monitor possible transboundary impacts at each stage of the project implementation - from construction to implementation of the activity, including legal operation of the facility in accordance with its technical parameters and the provisions of the investment proposal.

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