<u>Reply to APM Giurgiu notification no. 9124/1480/S.A.A.A./13.09.2023 regarding MMAP address no. DGEIPSC/R/22571/13.09.2023</u>

General comments

1. *The ElA documentation submitted provides a brief description of the investment proposal, both of the stages of the production process and of the technical infrastructure required to implement the investment proposal at the production site, which causes uncertainty about the details of the production process and the technological units of the facility.*

Answer:

In the RIM - EIA all these aspects are described very clearly, in great detail and in great detail, namely:

a. <u>description of the site and technical/technological infrastructure - these have been described as follows:</u>

- Chapter 2. PROJECT DESCRIPTION

The project proposed by the holder consists in the construction of a metal structure hall and the purchase and installation of a rotary incinerator for the incineration of medical and animal waste, in order to develop new incineration capacities for the geographical area comprising Giurgiu county and neighbouring counties, by equipping it with high performance equipment complying with the highest standards and technologies for environmental protection, with the reduction of waste transport distances between generators and processors.

Thermal waste treatment processes are a feasible option after recovery options (collection, sorting, recycling) and before controlled landfilling. High-temperature oxidation converts organic components into specific gaseous oxides, which are mainly carbon dioxide and water. The inorganic components are mineralised and transformed into ash.

The general purpose of waste incineration is:

1. minimising the potential for risk and pollution;
2. reducing the amount and volume of waste;
3. conversion of the remaining substances into a form that allows their recovery or storage;
4. transformation and recovery of the energy produced.

The works to be carried out for the implementation of the project, ensuring a technological flow in accordance with the legal provisions but also ensuring operation at maximum performance in terms of protection of environmental factors, will consist of:

→ construction of a hall made of coated sheet metal panels placed on a metal structure
→ purchase and installation in the technological flow of a waste incinerator type IE 1000R-300
→ purchase and installation in the technological flow of 2 cold rooms with V = 16 m3 each
→ purchase and installation of a weighing platform
→ purchase and location
→ a mobile weighing scale for 1 t
→ purchase and installation in the technological flow of 4 LPG tanks of 5000 l each
→ construction of concrete platforms
→ location of a basin with V = 10 m3
→ construction of water supply and sewage networks
→ making a connection to the district drinking water network
→ making a connection to the local sewerage network.

The implementation of the proposed project will increase the waste incineration capacity and diversify the company's activity by incinerating both non-hazardous waste and a broad category of hazardous waste.

- sub-chapter 2.1. PROJECT LOCATION

The administrative location of the project site under analysis is in the inner urban area of Giurgiu municipality, Sloboziei road, km 4, lot 2, Giurgiu county.

Figure 1 - Location of the project (Source: Google Earth)

The land proposed for the implementation of the project is located in Platform 2 of the former Giurgiu Chemical Plant.

The Stereo 70 coordinates of the project site are highlighted in the table below (Table 1) and Figure 2:

Table 1 - Stereo 70 coordinates of the site

Point determination	System degrees, minutes, seconds		STERO 70 System	
	Latitude	Longitude	Latitude (N)	Longitude (E)
1	43°53'13.28 N	25°55'56.53 "E	265677.891	575049.227
2	43°53'10.73 "N	25°55'59.13 "E	265599.852	575108.173
3	43°53'9.68 "N	25°55'57.28 "E	265566.969	575067.248
4	43°53'12.20 "N	25°55'54.76 "E	265644.103	575010.099

Figure 2 - Stereo 70 coordinate points of the site

The land under analysis, with an area of 3050.00 sqm, is classified as a building yard, production area, C.U.T. (LAND USE COEFFICIENT) = 2.4 sqm ADC/sqm of land and P.O.T. (PERCENTAGE OCCUPANCY OF THE LAND)= 60%. The land is located in zone "C" according to HCLM (Decisions of the Municipal Council)no. 173/2007. No changes to the current use are planned.

The land under analysis is located in the inner urban area of Giurgiu municipality, belonging to the private domain of the legal entity SC FRIENDLY WASTE ROMANIA SRL according to the Notarial Deed no. 250 of 22.02.2021 issued by BIN Ciobanu Dinei Victor with the following characteristics:

- is not encumbered
- is not located in a protected area
- there are no building bans

The land remains with the same owner throughout the execution of the works and after the execution of the works.

According to the updated General Urban Plan of Giurgiu Municipality, approved by the Decision of the Local Council of Giurgiu Municipality no. 37/2011, extended by the Decision of the Local Council of Giurgiu Municipality no. 89/2021, the land is located in **subzone I1 - Production, storage area**. The area is intended for buildings with maximum Gf + 3 levels and maximum height of 20.0 m (except for machine accents), with discontinuous building regime, with various functions related to productive activities: storage, specialized services for production, distribution and marketing plus various services for staff and customers.

In the Local Urban Planning Regulation related to the General Urban Plan of Giurgiu Municipality and in the Urban Planning Certificate no. 123/07.03.2023 issued by the Municipality of Giurgiu (attached), the permitted uses, the permitted uses with conditions and the prohibited uses in sub-area I1 are mentioned as follows:

Permitted uses:

- productive and service activities in large and medium-sized industrial constructions
- storage and distribution of goods and materials
- industrial research requiring large areas of land
- services for industrial area, transport, commercial storage, commercial services related to transport and storage
- ground and multi-storey car parks;
- maintenance and repair stations for cars and machinery:
- refuelling stations:
- trade, catering and personal services:
- service accommodation for staff providing permanent or security services, storage facilities for reusable materials: pre-collection platforms for urban waste.

Permitted uses with conditions

- current activities will continue to be allowed provided that the emissions are brought down to environmental standards within 5 years;
- Expansion or conversion of current activities will be allowed provided it does not worsen the pollution situation;
- geotechnical and seismic zoning conditions shall be taken into account for any use.

Prohibited uses:

- polluting or technologically risky productive activities - the project under consideration does not fall into this category
- the location of educational establishments, public or general interest services and sports facilities within limits where pollution exceeds permitted levels in areas with protected functions
- the location of dwellings other than company housing
- earthworks likely to affect the landscaping of public spaces and buildings on adjacent plots.
- any earthworks that may cause run-off onto neighbouring plots or prevent storm water drainage and collection.

The land proposed for the implementation of the project is located in the north-central part of the former industrial platform (Figure 3), sub-area I1 - Production, storage area. The sub-areas adjoining sub-area I1 are:

- North - Sub-area I3: Storage sub-area, services for industry compatible with protected functions (ZIROM SA), at ca. 50 m;
- East - Sub-area I3: Storage sub-area, services for industry compatible with protected functions, at ca. 240 and Subzone LM_2 : Subzone of individual and small collective dwellings in built-up areas at ca. 430 m;
- South - Sub-area V4: Infrastructure protection green spaces, approx. 530 m;
- West - Subzone G6: CET and thermal points.

Figure 3[1] - Location of land in Sub-area I1 and neighbouring sub-areas

[1] for better identification, the numbering of figures, tables, technological schemes, diagrams, etc. in RIM REV. 1 will be maintained throughout this documentation.

Figure 4 - View from the ground to the North - Subarea I3 (ZIROM SA)

b. description of all equipment - these have been described in detail as follows:

Subchapter 2.2. PHYSICAL CHARACTERISTICS OF THE ENTIRE PROJECT

The implementation of the project involves the construction of lightweight, metal frame constructions, namely:

- metal posts for support
- metal trusses for roof construction
- metal frames
- side walls made of fireproof sandwich panels

Light construction will be placed on foundations to be built on site. The posts will be fixed to the foundations by means of metal anchor connections which will be fixed to the concrete with anchor bolts.

The location of the incinerator and the technological annexes involves:

- making connections for fixing them to the concrete platform
- the realisation of technological lines for the fuel supply of burners
- the construction of electrical lines and connections
- location of the incinerator's construction elements

The activity to be carried out with the equipment to be installed is the incineration of non-hazardous animal and medical waste.

To determine the incineration capacity an analysis based on:

A. incineration capacity for non-hazardous animal waste

B. incineration capacity for medical waste

For both types of waste, the combustion capacity is 300 kg/h, i.e. **7.2 t/day** in continuous operation.

The incineration capacity of this type of incinerator, for the same volume of the primary combustion chamber, is given by:

- burner capacity
- waste feed rate
- rotational speed of the primary combustion chamber

Taking into account the technical characteristics of the incinerator analysed in this paper (according to the specifications in the technical book) its incineration capacity is 300 kg/h, i.e., 7.2 t/day.

The annual incineration capacity is calculated according to the hourly capacity, the daily capacity and the number of operating days/year:
0.3 t/h x 24 h = 7.2 t/day
7.2 t/day x 320 days/year = 2304 t/year
This represents the total maximum incineration capacity for all types of waste.

The division of this capacity by type of waste will depend on the availability of waste categories for incineration (hazardous or non-hazardous medical waste, non-hazardous or non-hazardous animal waste) and on the incineration programme to be carried out (strictly during the incinerator's operational phase, after obtaining the environmental permit and other permits required by the legal provisions in force).

Metal hall
It is intended to locate a hall with the following characteristics:

- foundation made of reinforced concrete blocks
- resistance structure - metal beams
- sandwich panel walls
- dimensions:
    - L = 24.68 m
    - l = 12.84 m
    - H eaves = 5 m
    - H ledge = 7.5 m
- 2-partial sides sandwich roof
- floor - concrete platform

Waste incinerator type IE 1000R-300
Construction features:

a) waste access room;
b) rotary, primary combustion chamber;
c) ash disposal room;
d) fixed, secondary combustion afterburner chamber;
e) supplementary air distribution system;
f) fuel distribution installation;
g) automation installation;
h) continuous and automatic waste supply system;
i) automatic ash evacuation system.

No demolition work is required to complete the project.

Subchapter 2.3. MAIN FEATURES OF THE OPERATIONAL STAGE OF THE PROJECT
The project owner proposes to construct a metal structure hall and to purchase and install a rotary incinerator for the incineration of non-hazardous, medical (hazardous and non-hazardous) and animal waste.

Technical features

- incineration capacity - 300 kg/h respectively 7200 kg/day in continuous operation
- fuel - LPG
- fuel consumption - 24.6 ÷ 122.5 l/h
- primary combustion chamber with the characteristics
    - primary combustion chamber volume = 10,5 m3

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    - primary combustion chamber temperature - 850 C°
    - 1 burner type P 61 on LPG
- secondary combustion chamber with the characteristics
    - primary combustion chamber volume = 9,7 m3
    - primary combustion chamber temperature - 1100 C°
    - 1 burner type P 61 on LPG
    - gas retention time in the secondary combustion chamber - 2 seconds
- volume of ash resulting - 3
- measured emission parameters

Table 2 - Incinerator emission parameters

Parameter	Emission limits every 30 minutes	Measured values of incinerator type IE-1000R-300
Solid particle	30 mg/m³	1.2 mg/m³
Sulphur dioxide	200 mg/m³	2.4 mg/m³
Nitrogen Dioxide*	400 mg/m³	60 mg/m³
Carbon Monoxide	100 mg/m³	78.3 mg/m³

IE 1000R-300 incinerators are equipped with state-of-the-art technology, both in terms of plant efficiency and environmental protection features.

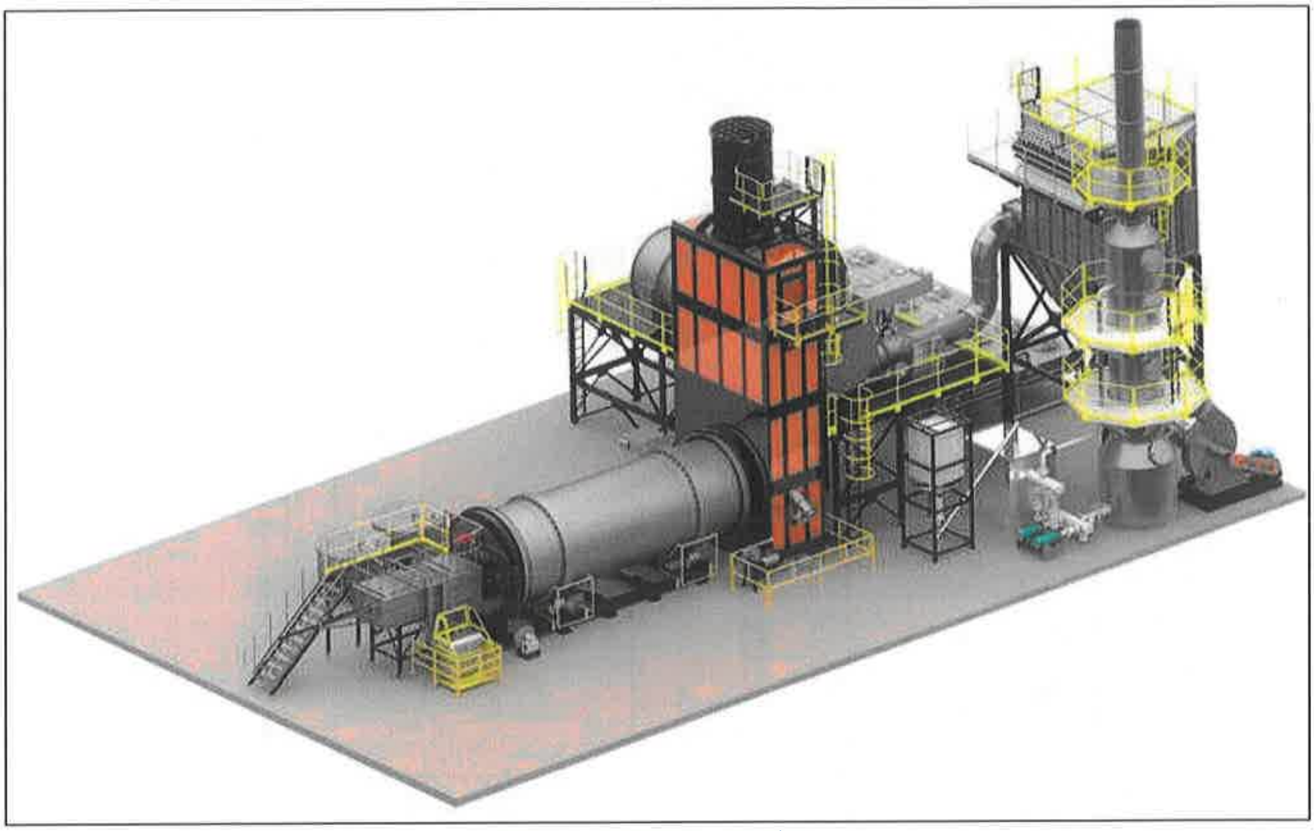


Figure 5 - Incinerator overview

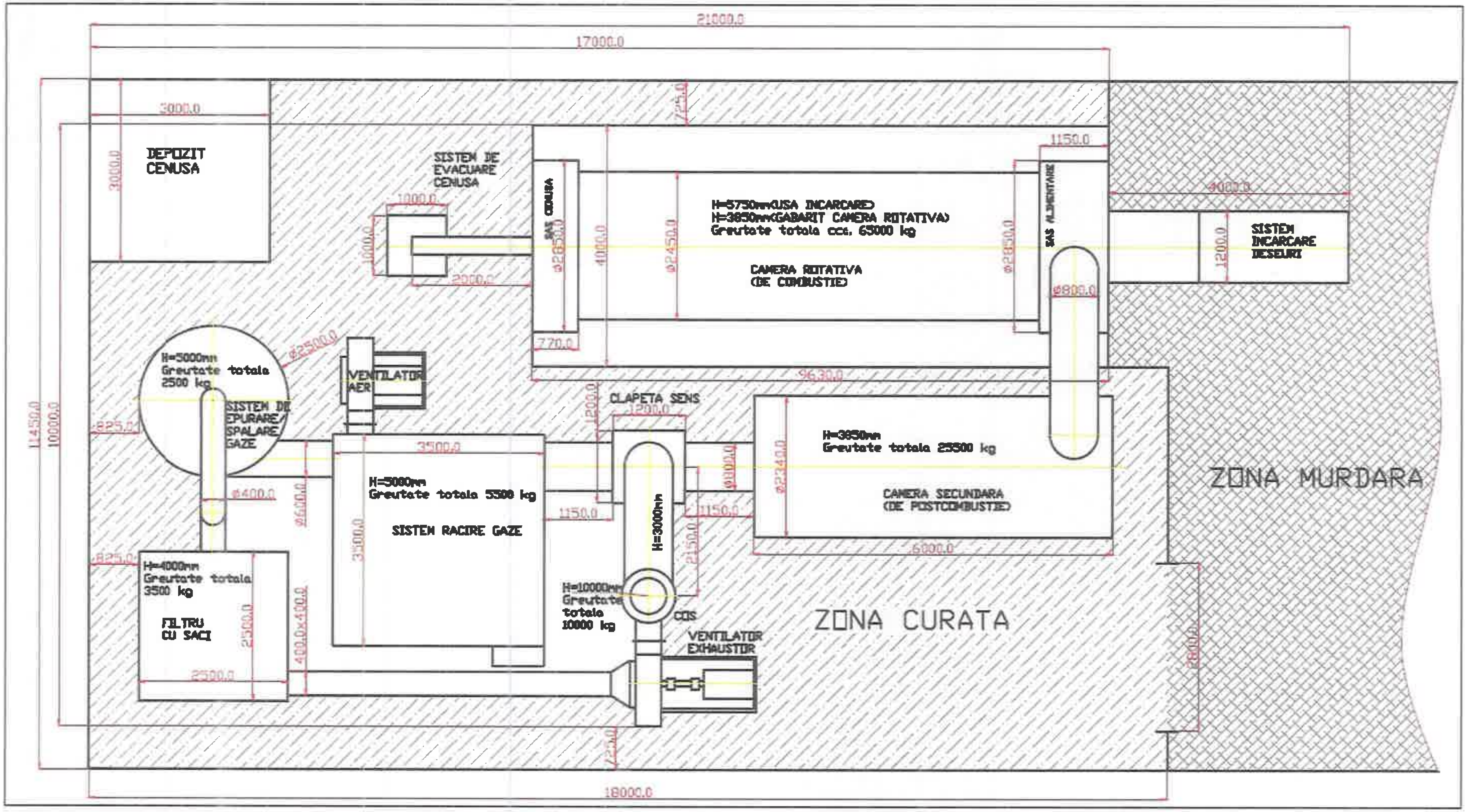


Figure 6 - Layout of the location of the incinerator components with the gauge dimensions

The IE 1000R-300 is modern and innovative in terms of waste incineration efficiency. It is an incinerator model equipped with a controlled air supply system designed to ensure the best conditions for incinerating a very wide range of waste, both hazardous and non-hazardous.

Presentation of the construction elements of the incinerator type IE 1000R-300

According to the technical regulations, the IE 1000R-300 type environmental incinerator with two combustion chambers is equipped with two independent burners, so that the gases and suspended materials resulting from the primary combustion in the rotating combustion chamber pass into the fixed afterburner chamber, where any gases and suspended particles are retained and destroyed. The burners that equip the rotary environmental incinerator operate with LPG and are each controlled by an electronic regulator. This ensures a residence time of the combustion gases (min. 2 s, according to the legislation in force) in the fixed afterburner chamber, which results in a proper/complete combustion, ensuring that the emission values are within the limits set by the regulations in force.

The incinerator's resistance frame is made of carbon steel pipe by cutting, mechanical machining and electric welding. The configuration of the metal structure ensures:

- mechanical strength of the assembly during the execution and operation of the installation;
- access for waste loading and ash disposal;
- supporting the incinerator components.

The metal construction has provided locations for access to the burners, viewing windows and the electrical installation of the drive and automation. It is protected by painting with primer and enamel suitable for this category of machinery.

Rotary primary combustion chamber

The rotating primary combustion chamber has a volume of 10.5 m³ and is equipped with an injector to introduce additional air, thus ensuring complete and homogeneous combustion up to a temperature of 850°C. The burner in this chamber, type P 61, on LPG fuel with a consumption of (24,6 ... 122,5) l/h, is controlled by an electronic microprocessor controller and is easy to use.

The combustion chamber (primary combustion) masonry is made of refractory brick or insulating concrete, outwards and at the ends of the rotary chamber.

Fixed, secondary combustion afterburner chamber

The fixed post-combustion secondary combustion chamber has a volume of 9.7 m³, in which the complete combustion of volatile organic compounds takes place at a temperature of 1100° C, ensuring a residence time of min. 2 seconds. The burner in this chamber, type P 61, on LPG fuel with a consumption of (24,6 ... 122,5) l/h, is controlled by an electronic microprocessor controller and is easy to use.

The temperature in this room is programmable and monitored with a thermocouple. The measured temperature in the fixed afterburner chamber and the programmed temperature will be read on a digital display.

In the incineration process the gases from the primary combustion chamber will be sucked into the scrubbing area, which before being discharged, will be scrubbed and cleaned so as not to cause negative effects on the environment.

The afterburner (secondary combustion) chamber is made of brick and refractory concrete, similar to the rotary chamber.

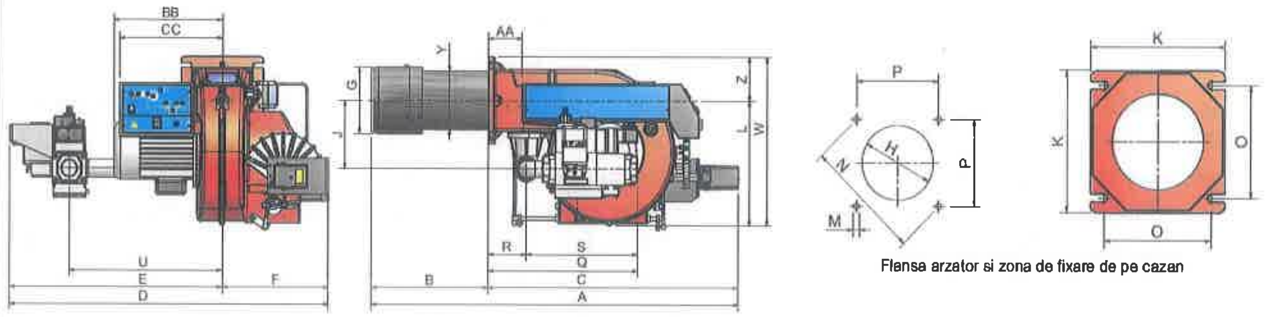
The afterburner chamber is equipped with an emergency chimney, which in the event of a fault, allows the flue gases to be removed until the incineration of the current char has been completed.

Each combustion chamber is equipped with a burner, which starts automatically when the flue gas temperature drops below 850° C or 1100° C after the last combustion air intake. These burners are also used in the start-up and shut-down phases, in order to ensure the combustion temperatures in these phases and also during the period when unburned waste is in the combustion chamber. Burners may not be fuelled with fuels which could produce emissions higher than those resulting from the combustion of petrol as referred to in Article 50(2) par. 3 of Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions (integrated pollution prevention and control) of 24 November 2010.

The technical characteristics of the burners used in the 2 combustion chambers are shown below:

Table 3 - Technical characteristics of burners

Burner Type		P61 M-...0.xx	P65 M-...0.xx
Power	min. - max. kW	160 - 800	270 - 970
Fuel		methane gas	methane gas
Category		(see next paragraph)	(see next paragraph)
Gas flow	min.- max. (Nm3/h)	17 - 84.7	28.6 - 103
Gas pressure	min.-max. mbar	(see note 2)	(see note 2)
Supply voltage		230V 3- / 400V 3N - 50Hz	230V 3- / 400V 3N - 50Hz
Total power consumption	kW	1.6	2
Fan motor power	kW	1.1	1.5
Degree of protection		IP40	IP40
Weight approx.	kg	55- 70	60- 80
Operating mode		Two steps - Progressive - Fully modulating	Two steps - Progressive - Fully modulating
Ramp type - Gas connection - 32		1" ¼ /Rp1 ¼	1" ¼ /Rp1 ¼
Ramp type - Gas connection - 40		1" ½/Rp1 ½	1" ½/Rp1 ½
Ramp type - Gas connection - 50		2" Rp2	2" Rp2
Ramp type - Gas connection - 65		2" ½/ DN65	2" ½/ DN65
Working temperature	°C	-10 ± +50	-10 ±+50
Storage temperature	°C	-20 ±+60	-20 ±+60
Service life		Flashing	Flashing



	DN	A(S*)	A(L*)	AA	B(S*)	B(L*)	BB	C	CC	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	U	V**	W	Y	Z
P61 PR - 0.32	32	1079	1169	99	343	433	314	736	298	812	500	312	184	204	210	240	344	M10	269	190	190	341	112	229	444	-	464	162	120
P61 MD - 0.32	32	1079	1169	99	343	433	314	736	298	812	500	312	184	204	210	240	344	M10	269	190	190	341	112	229	444	-	464	162	120
P61 AB - 0.32	32	1009	1099	99	343	433	314	666	298	812	500	312	184	204	210	240	344	M10	269	190	190	341	112	229	444	-	464	162	120
P61 PR - 0.40	40	1079	1169	99	343	433	314	736	298	812	500	312	184	204	210	240	344	M10	269	190	190	439	112	327	444	-	464	162	120
P61 MD - 0.40	40	1079	1169	99	343	433	314	736	298	812	500	312	184	204	210	240	344	M10	269	190	190	439	112	327	444	-	464	162	120
P61 AB - 0.40	40	1009	1099	99	343	433	314	666	298	812	500	312	184	204	210	240	344	M10	269	190	190	439	112	327	444	-	464	162	120
P61 PR - 0.50	50	1079	1169	99	343	433	314	736	298	812	500	312	184	204	210	240	344	M10	269	190	190	447	112	335	444	-	464	162	120
P61 MD - 0.50	50	1079	1169	99	343	433	314	736	298	812	500	312	184	204	210	240	344	M10	269	190	190	447	112	335	444	-	464	162	120
P61 AB - 0.50	50	1009	1099	99	343	433	314	666	298	812	500	312	184	204	210	240	344	M10	269	190	190	447	112	335	444	-	464	162	120
P61 PR - 0.65	65	1079	1169	99	343	433	314	736	298	997	685	312	184	204	250	240	420	M10	269	190	190	515	112	403	540	313	540	162	120
P61 MD - 0.65	65	1079	1169	99	343	433	314	736	298	997	685	312	184	204	250	240	420	M10	269	190	190	515	112	403	540	313	540	162	120
P61 AB - 0.65	65	1009	1099	99	343	433	314	666	298	997	685	312	184	204	250	240	420	M10	269	190	190	515	112	403	540	313	540	162	120

Figure 7 - Burner gauge characteristics P 61

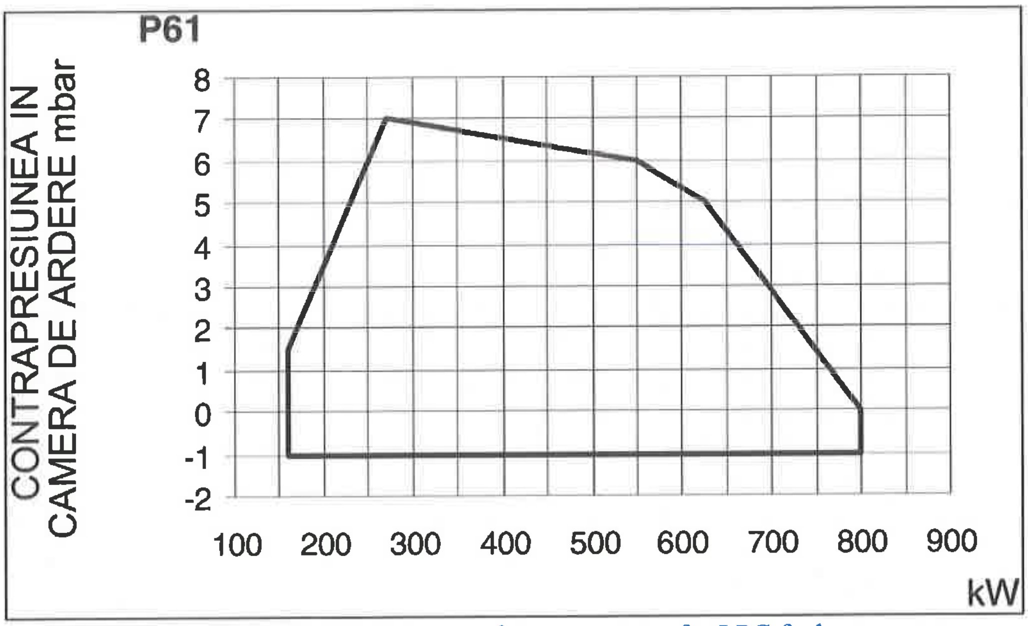


Figure 8 - P61 burner performance curve for LPG fuel

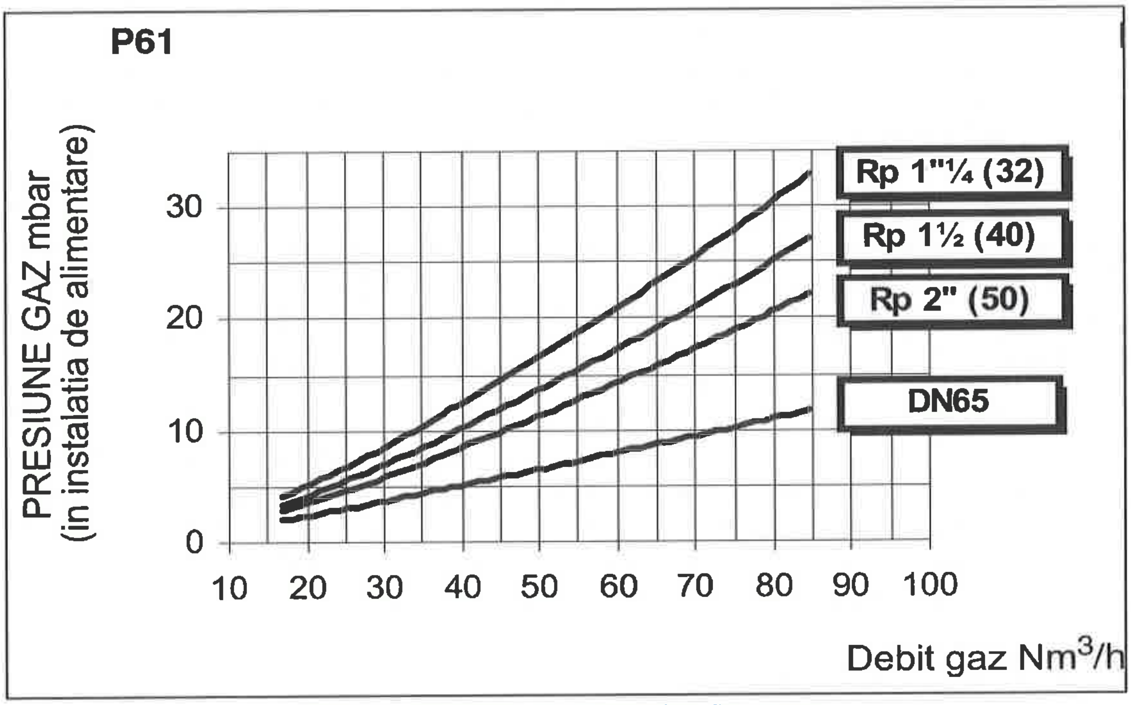


Figure 9 - Installation gas pressure/gas flow curves

The burner operating parameters are continuously monitored by sensors that transmit signals to the process computer software. Any abnormalities in burner operation are immediately signalled visually and acoustically so that early action can be taken.

Supplementary air distribution system

The extra air is necessary for correct and complete combustion. The supplementary air distribution system consists of a general fan for supplementary combustion air, with the following characteristics: p = 530 mm H_2O; P = 11 KW, flow rate = 5,000 Nm³/h, and with elements for automatic regulation of the air

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flow sections from the air conduction paths to the access points in the two combustion chambers and to the chimney connection (to ensure gas ejection and dilution in case of damage).

Fuel distribution installation

The fuel distribution system supplies the two burners (the rotating combustion chamber and the fixed afterburner chamber) with fuel from the distribution network via a tap connection.

Automation installation

The automation system ensures temperature regulation to the prescribed values in the two chambers, ensures correct combustion regulation and protection of the entire installation by means of safety elements and blocking the operation of the equipment in the event of failure to comply with certain operating conditions of the burners or exceeding the prescribed temperatures.

The automation system independently monitors (records and prints) the following parameters:

1. oxygen (O_2): (0 ... 21) %;
2. temperature: (0 ... 1370)°C, both in the combustion chamber and in the afterburner chamber.

Automatic adjustment of the incinerator operation is as follows:

1. the temperatures in each combustion chamber are continuously monitored:
   a. if the temperature reaches the maximum value in the soft setting, the supply of LPG to the burners in the room in question is reduced or stopped completely
   b. if the temperature reaches the maximum value in the soft setting, the supply of LPG to the burners in the room in question is reduced or stopped completely
2. the oxygen concentration is monitored and if its value falls below the minimum value in the software, the fan speed is automatically switched on or increased to provide additional air supply to the combustion chambers or the air inlet to the burners

The incinerator automation plant also contains its own memory recording system, which can be downloaded to a computer at a later date, as well as the option of card extraction and portability. This offers the possibility of printing instantaneous values at a time without downloading the entire data and ensures that data can be transmitted directly if the system is connected to a computer at the time of incineration.

Continuous and automatic waste feeding system

Incineration waste is expected to be collected and brought to the incineration facility in bins. They are placed in the loading hopper, from where they are taken by a hydraulic loading system into the feed lock, where a hydraulic piston transfers them to the primary chamber of the incinerator and thus ensures the incinerator feed rate of 300 kg/h. Waste is fed continuously, provided that occupational health and safety regulations are strictly observed.

Automatic ash removal system

Since the ecological incinerator has a primary, rotating combustion chamber, the ash is continuously drained into a box and then automatically discharged through a rotating chute into another box where it is loaded into bags. The ash is inert, non-putrescible, sterile and will be analysed for carbon and heavy metal content by specialised laboratories.

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 non-polluting substance. 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 corrective measures will be taken.

Following the flue gas cleaning system, the dry filter system and then the exhauster 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°
- 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 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 discharge

Technical characteristics of the exhauster for flue gas discharge 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 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 peak loads that occur at the start of the incineration process (see paragraph above).

The advantages of this gas cleaning solution are:

Pollutant removal efficiency

- HCl > 98.0%
- SO2>98.0%
- HF>98.0%
- Hg >98.0%
- Dioxins and Furans >98.0%

Low investment costs

- It does not use water thus eliminating the problems of subsequent water treatment;
- Very low collateral energy consumption;
- There is no need to reheat the gas after treatment;
- It does not require a specialised sludge treatment plant.

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Chimney (flue gas exhaust)

The combustion gases from the combustion chamber pass into the post-combustion chamber, which is provided at the bottom with an injector and which ensures that the temperature of the gases at the outlet is raised to 1100°C, in accordance with the applicable regulations in force concerning the ecological incineration of waste. The dwell time in the afterburner chamber at the above-mentioned temperature ensures the destruction of the organic components in the emission within the required limits. The flue gas outlet pipe connects the incinerator to the chimney. The chimney is made of stainless steel, thermally insulated, with a diameter of Ø 500 mm and a height of 10 m above +/- 0.00.

Cold rooms

Two cold rooms will be set up for the temporary storage of animal and medical waste. They will have the following characteristics:

- useful volume = 16 cubic metres
- dimensions 3 x 2,6 x 2 m
- working temperatures 4 ÷ 6 C°

LPG household

To provide the fuel needed to operate the incinerator, an LPG household will be built consisting of:

- 4 metal tanks with V = 5000 l
- 2 concrete wall cavities, explosion-proof and fireproof

Car park

In order to carry out its activity in good conditions, the company has purchased 4 Ford Transit trucks with a capacity of 3.5 t. They will be authorized and marked according to the legal provisions.

The incineration activity does not result in products or by-products but only in waste ash. The amount of ash resulting is a maximum of 3% of the waste incinerated.

c. description of the workflows for each waste class (including logic diagrams) - these have been described in detail as follows:

Subchapter 2.3. MAIN FEATURES OF THE OPERATIONAL STAGE OF THE PROJECT

Technology flows

The only process taking place on the site under review is waste incineration. **The new equipment to be installed will be used exclusively for the incineration of non-hazardous waste, animal waste and hazardous and non-hazardous medical waste.**

The technological flows and facilities for complying with the legal requirements for their organisation will be described below for all types of waste entering the incineration process.

In a first phase, the common rules for all types of waste will be followed, namely:

- before taking the acceptance of the waste at the waste incineration plant the operator shall check that the waste is accompanied by all documents required by national and European waste legislation established by Decision 2000/532/EC
- before taking the acceptance of the waste into the waste incineration plant the operator shall determine by weighing the mass of each type of waste and check in the accompanying documents whether it has passed the waste code according to the classification of the European waste list established by Commission Decision 2014/955/EU
- 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.

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

1. Waste acceptance
   - 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 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 equipment 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.

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

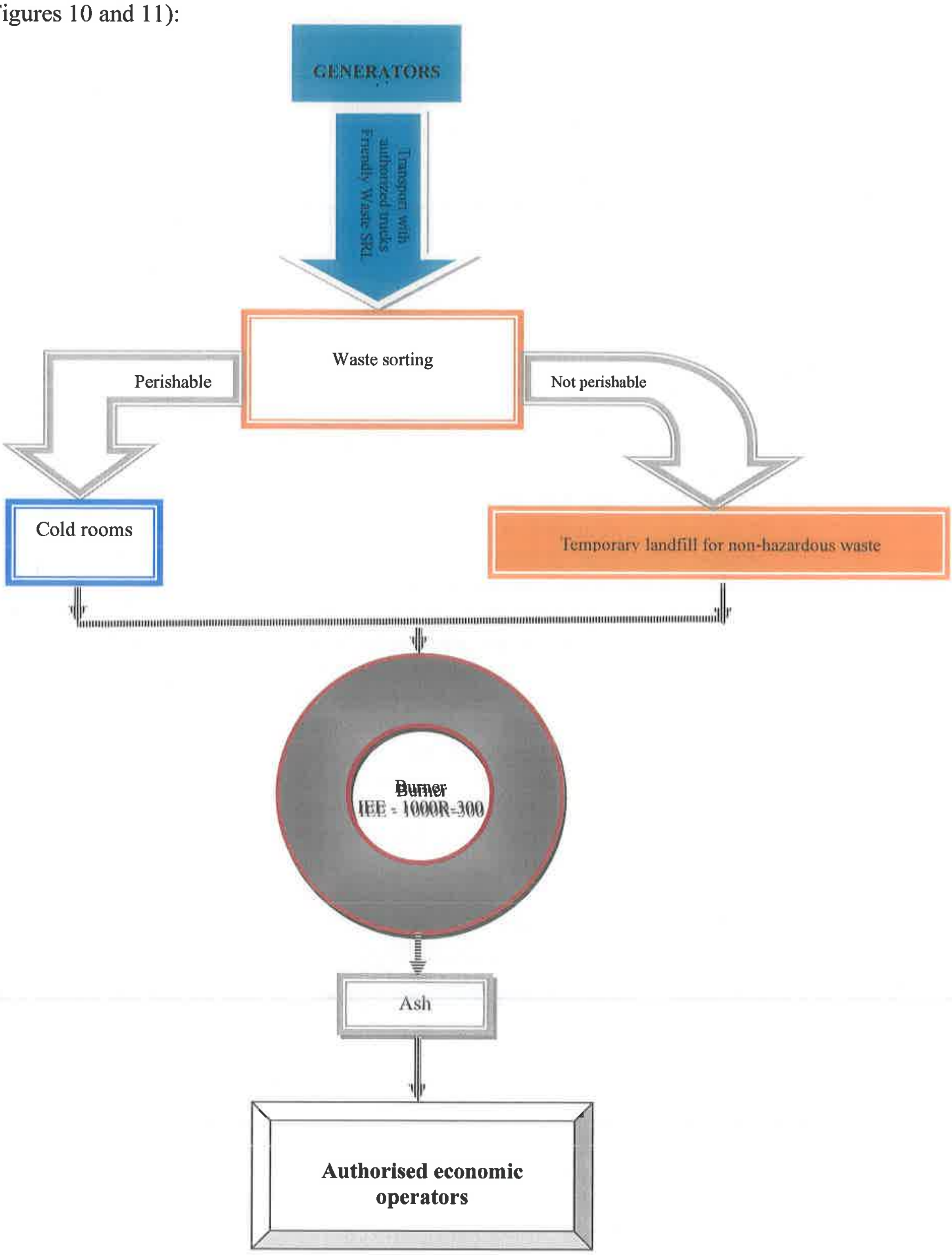

Figure 10 - Non-hazardous waste stream

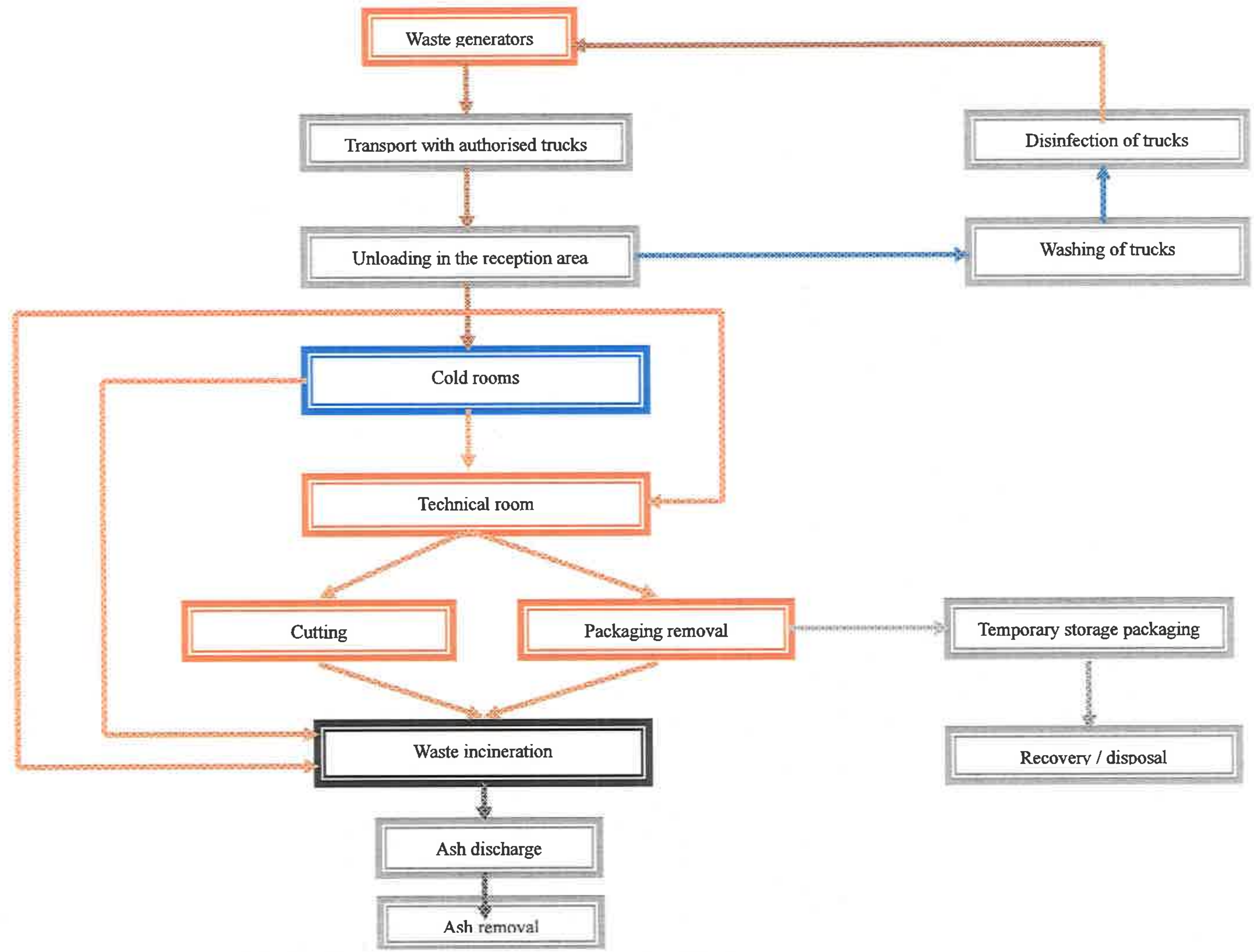

Figure 11 - Non-hazardous animal waste stream

B) Technology flow for medical waste incineration

1. Waste acceptance
    - 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 transport means and the containers used for transporting 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.

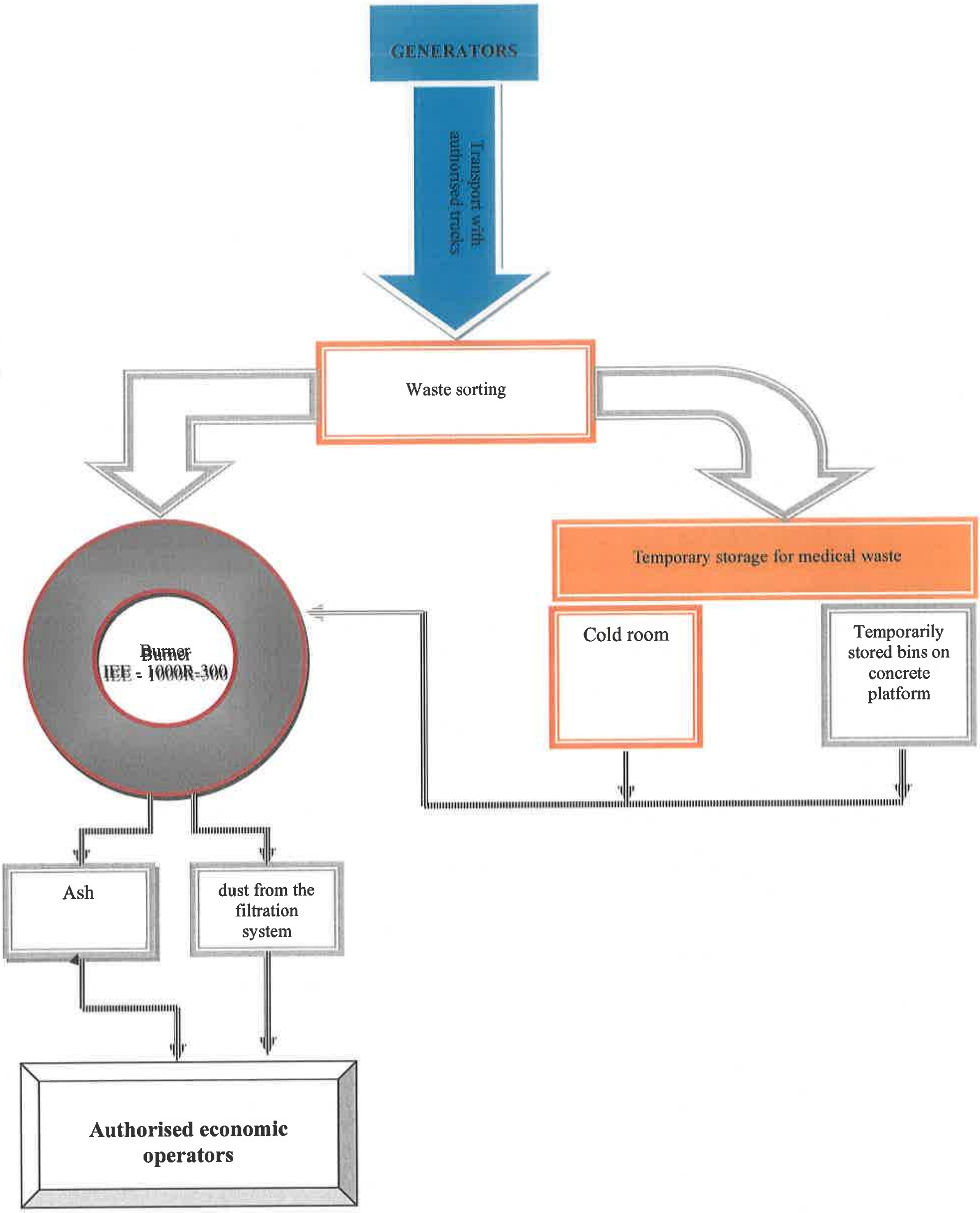

Figure 12 - Medical waste stream

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2. *A comparative assessment of the proposed activities with the currently available BAT implementation requirements has been carried out. The operator's proposal complies with the BAT criteria in terms of types of pollutants, their emission limits and treatment facilities required to comply with BAT*

3. *The EIA report does not contain information and assessment of the reagents for treating the flue gas generated, H warnings and P recommendations and there is no mention of an annual performance standard. There is no information on how hazardous chemicals to be used as reagents and/or auxiliary materials will be stored*

Answer:

As mentioned in Subchapter 2.3. MAIN CHARACTERISTICS OF THE OPERATING STAGE OF THE PROJECT in the flue gas treatment system the "Solvay- Bicar ($NaHCO_3$ mixed with activated carbon) mixture type absorbent" is used.

$NaHCO_3$ is also called sodium bicarbonate. According to the safety data sheet (attached to this documentation) it has the following characteristics and classifications:

- Registration number (REACH) 01-2119457606-32-xxxx
- EC number 205-633-8
- CAS No 144-55-8

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

This substance does not meet the criteria for classification according to Regulation (EC) No 1272/2008/EC.

Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP) - not required

Other hazards

PBT and vPvB assessment results

According to the results of its assessment, this substance is not PBT or vPvB.

In view of the above sodium bicarbonate used in gas cleaning is not a hazardous chemical and therefore has no H warnings and no P recommendations.

The safety data sheet states how the product is packaged:

SECTION 14: Transport *information*

- 14.1 UN number or identification number - not subject to transport regulations
- 14.2 Correct UN name for consignment - not assigned
- 14.3 Transport hazard class(es) - none
- 14.4 Packing group - not assigned
- 14.5 Environmental hazards - not an environmental hazard according to dangerous goods regulations
- 14.6 Special precautions for users - No further information.
- 14.7 Maritime carriage in bulk in accordance with IMO instruments - The cargo is not intended to be carried in bulk.

This reagent is not supplied pure because the flue gas purification system uses directly the Solvay-Bicar mixture type absorbent which will be supplied by the incinerator manufacturer. The automation system will signal in advance the low stock in the gas purification system storehouse so that the order for the reagent can be placed in time. Upon arrival at the Friendly Waste Romania SRL site, the reagent will be unloaded directly into the dedicated storage of the gas purification system.

4. *Insufficient data are provided for the waste sorting method:*
a. *mechanized, manual or other method. It is not clear whether waste from other countries will be accepted;* - these have been described in detail as follows:

Answer:
<u>Subchapter 2.3. MAIN FEATURES OF THE OPERATIONAL STAGE OF THE PROJECT</u>
<u>*Technology flow for the incineration of non-hazardous and non-hazardous animal waste*</u>

1. Waste acceptance

- 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.

4. From the unloading and/or temporary storage area the waste containers are taken by the transport equipment to the incinerator area. Here the containers are unloaded into the continuous feed system of the incinerator.

It is not intended to accept waste from other countries for incineration.

b. *there is no description of the separate storage areas foreseen for the different types of waste, tar the description 'temporary storage on a concrete platform in a partially covered lightweight shed' is insufficient given the types of waste accepted, which are volatile and decompose rapidly, in Group 02 'Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing'. It is foreseen to accept waste - sludge, faecal matter, urine and manure, unstable food products, etc. in 240-11001 containers. No clear information is given about the containers - corrosion resistance, environmental protection against hazardous emissions and odours, whether they are mobile or stationary, whether they allow inspection and repair of the underside;*

Answer:
- these have been described in detail as follows:

Subchapter 2.3. MAIN FEATURES OF THE OPERATIONAL STAGE OF THE <u>PROJECT</u>
<u>*Technology flow for the incineration of non-hazardous and non-hazardous animal waste*</u>

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. At least at this stage, no means of reducing the

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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.

B) Technology flow for medical waste incineration

1. Waste acceptance
    - 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.

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.

With reference to the request "*No clear information is given on containers - corrosion resistance, environmental protection against hazardous emissions and odours, whether they are mobile or fixed, whether they allow inspection and repair of the underside;*" the following clarifications are made:

- 240 litre capacity containers are dedicated containers made of plastic and fitted with rubber seals on the lids to ensure a tight seal and prevent the release of odours or any volatile fractions that may form, specific to certain categories of waste. In general, these containers will be used for animal waste, i.e., animal products which are no longer fit for human consumption.
- The 1100 litre capacity containers are dedicated containers made of corrosion-protected metal and fitted with rubber seals on the lids to ensure a tight seal and prevent the release of odours or the escape of any volatile fractions that may form, specific to certain categories of waste.
- both types of containers are suitable for inspection to check their integrity. In fact, this inspection process is carried out at each unloading and sanitation cycle for all types of

containers used for the transport of waste, which, according to legal requirements, must be sanitised after each unloading.

c. *it is not clear whether incineration is part of R1 recovery for energy production or D10 incineration-surface disposal;*

The incineration process that will take place on the site falls under operation D10 - surface incineration-disposal

d. *there is no mention of options and measures for equipping the premises with tanks for spilled or leaking liquids or tanks for bulk waste;*

- no liquid waste shall be brought onto the site
- no bulk waste shall be brought to the site but only in containers of different types (plastic or metal as described in the chapters of the RIM) and sizes

e. *no information is provided on the disposal of the waste generated - ash - period of storage and subsequent treatment - place of recovery or disposal. Also, no information is given on the waste route to the final consignee*

Information on the types of ash generated, how it is stored and disposed of is given in sub-chapter "2.4.6. QUANTITIES AND TYPES OF WASTE PRODUCED DURING CONSTRUCTION AND OPERATION STAGES" in Table 13:

Table 4 - Waste generated in the operation phase

Waste name	Estimated quantity to be generated t/year	Waste code*	Source of generation	Storage/storage method	Proposed waste disposal / recovery
Paper - cardboard packaging	0.5	15 01 01	collective packaging resulting from the unpackaging of by-products collected from generators	Plastic bin	It is recovered by authorised economic agents
Plastic packaging	0.5	15 01 02	collective packaging resulting from the unpackaging of by-products collected from generators	Plastic bin	It is recovered by authorised economic agents
Wooden packaging	0.1	15 01 03	collective packaging resulting from the unpacking of by-products collected from shops	Concrete platform	It is recovered by authorised economic agents
Metal packaging	0.2	15 01 04	collective packaging resulting from the unpacking of by-products collected from shops	Metal container	It is recovered by authorised economic agents
Absorbents contaminated with hazardous substances	0.01	15 02 02*	cases of accidental pollution	Metal container	Disposal by authorised economic operators

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Filter bags	0.07	15 02 03	bag filtration system	Metal container	Disposal by authorised economic operators
Ferrous materials from combustion ashes	0.1	19 01 02	incineration of medical waste containing metals	Metal container	It is recovered by authorised economic agents
Ash	1.5	19 01 11* bottom ash and slag containing dangerous substances	incinerator	Containers with a capacity of 1100 l	Disposal by authorised economic operators
Ash	37.5	19 01 12 flue-gas dus and slag other than those mentioned in 19 01 11*	incinerator	Containers with a capacity of 1100 l	Disposal by authorised economic operators to the authorised non-hazardous waste landfill serving the area
Ash	0.5	19 01 12 bottom ash and slag othe than those mentioned in 19 01 11*	bag filtration system	Containers with a capacity of 1100 l	Disposal by authorised economic operators to the authorised non-hazardous waste landfill serving the area
grease and oil mixture from oil/water separation other than those mentioned in 19 08 09	0.1	19 08 10*	cleaning the hydrocarbon separator	will be collected in sealed containers by the company that will clean the separator	Disposal by authorised economic operators
sludge from the sewage treatment plant	0.5	19 08 12	operation of the treatment plant	metal container	Disposal by authorised economic operators
Household waste	12 m3/year	20 03 01	Administrative, staff activity	Eurobins placed on the platform	It is eliminated by economic agents authorized by Giurgiu Local Council

Ash collection containers are fitted with gasketed lids to seal the containers and prevent the spread of ash dust.

These containers are placed on the concrete platform in the incinerator area, at a safe distance from the incinerator, in a designated area.

Depending on the type of ash resulting from the incineration process, it is collected separately (for codes 19.01.11* and 19.01.12) and disposed of separately.

Ash falling under code 19.01.11* shall be disposed of by economic agents authorised for this purpose and in compliance with the legal provisions in force.

Ash falling under code 19.01.12 shall be disposed of by economic agents authorised for this purpose and in compliance with the legal provisions in force.

For both types of waste, it is not possible at this stage to specify the economic operators who will be in charge of ash disposal and the route they will take. This route depends on where the ash will be taken for disposal. What can be specified very clearly at this stage is that both the transport of the ash (route and type of means of transport) and the place of disposal will be approved by the competent authorities in strict compliance with the relevant legal provisions.

5. *The report does not mention how and where liquid and paste waste is mixed when efficient and environmentally sound management of the waste preparation process is required,*

Answer:

No mixing of liquid or paste waste will be practiced on the site.

6. *Estimated quantities for individual wastewater flows and pollutants during operation are reported. A quantitative and qualitative analysis is provided. Concerning the discharge of water after treatment by local wastewater treatment plants, no information is provided on the quality parameters of the effluent discharged into the Danube River.*

Answer:

In chapter "8. DESCRIPTION OF THE MEASURES CONSIDERED TO AVOID, PREVENT, REDUCE OR COMPENSATE FOR ANY SIGNIFICANT NEGATIVE EFFECTS ON THE IDENTIFIED ENVIRONMENT" - **Transboundary nature of the impact** - Environmental factor water, it is specified that "Wastewater from the analysed site that reaches the industrial sewerage network will be subject to 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 sewerage network (the portion of the network managed by SC Delta Gas SRL) from where it is discharged into the Danube river.

The concentration of pollutants in the wastewater resulting from and discharged from the analysed site is within the maximum values regulated by GD 325/2005, Annex 2, Table 1 (NTPA 01/2005).

The resulting wastewater flow rate at the site analysed is 2.06 m^3 /day = 0.0858 m^3 /hour = 0.000023 m^3 /s."

It follows that the quality parameters of the effluent discharged into the Danube River are within the limits imposed by the maximum values regulated by GD 325/2005, Annex 2, Table 1 (NTPA 01/2005).

7. *Information is provided on the parameters of all organized emission sources at the site, Dispersion modelling of emissions from on-site sources shows that in the proposed investment area and near residential areas of Bishkek, emissions from on-site sources do not reach significant pollutant concentrations above regulated concentration limits. The mathematical model used in the EIA report to assess the dispersion of emissions and their impact on the air quality of Giurgiu municipality is based on these results. The model used for the assessment of air pollutant emissions on the territory of the Republic of Bulgaria is not approved by the environmental legislation of the Republic of Bulgaria for the segment "atmospheric air". The modelling results presented do not provide evidence for the assessment of the estimated transboundary impact on ambient air quality on the territory of Bulgaria. There is no assessment of the cumulative impact of all sources of harmful emissions in the area of the investment proposal initiated by the holder.*

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Answer:

We will analyse all the requirements in this paragraph in turn:

Dispersion modelling of emissions from on-site sources shows that in the proposed investment area and near residential areas of Bishkek, emissions from on-site sources do not reach significant pollutant concentrations above regulated concentration limits.

Answer:

We have not identified this town on the territory of the Republic of Bulgaria. The only town with this name that we found after researching is the town of Bishkek in Turkey, Kyrghyzstan province, which is not related to the project.

The model used for the assessment of air pollutant emissions on the territory of the Republic of Bulgaria is not approved by the environmental legislation of the Republic of Bulgaria for the segment "atmospheric air".

Answer:

The model used in our work is one that primarily complies with Romanian and European legislation.

As presented in chapter "6. DESCRIPTION OF THE SIGNIFICANT EFFECTS THAT THE PROJECT MAY HAVE ON THE ENVIRONMENT" - point "Dispersion of pollutants in the air, maximum area of influence and changes in quality" we have the following explanations.

"A Gaussian model, i.e., the climatological model based on the Martin and Tikvart model theory, was used to determine the immission concentration fields of the pollutants released into the atmosphere by the sources related to the operation of the target.

This is a model for estimating long-term averaging pollutant concentrations for continuous point or surface sources.

The fundamental physical basis of the model is the assumption that the spatial distribution of concentrations is given by the Gaussian wedge formula."

The climate model based on Martin and Tikvart model theory is recognised throughout the scientific community in the field and applied worldwide.

The modelling results presented do not provide evidence for the assessment of the estimated transboundary impact on ambient air quality in Bulgaria.

Answer:

Under Chapter "6. DESCRIPTION OF THE SIGNIFICANT EFFECTS THE PROJECT MAY HAVE ON THE ENVIRONMENT - **Impact assessment at the Bulgarian border -** Centralisation of data obtained from mathematical modelling of pollutant dispersion in the atmosphere" the estimated impact on ambient air quality on the territory of Bulgaria has been presented at the Bulgarian border at the nearest point for all relevant pollutants. Thus, in the centralized tables with the concentration values in relation to the distance from the incinerator site the results obtained for the concentrations in immission for pollutants that can be emitted from the operation of the incinerator are clearly highlighted. These are presented below (where the situation at the residential boundary of the town of Ruse has been added):

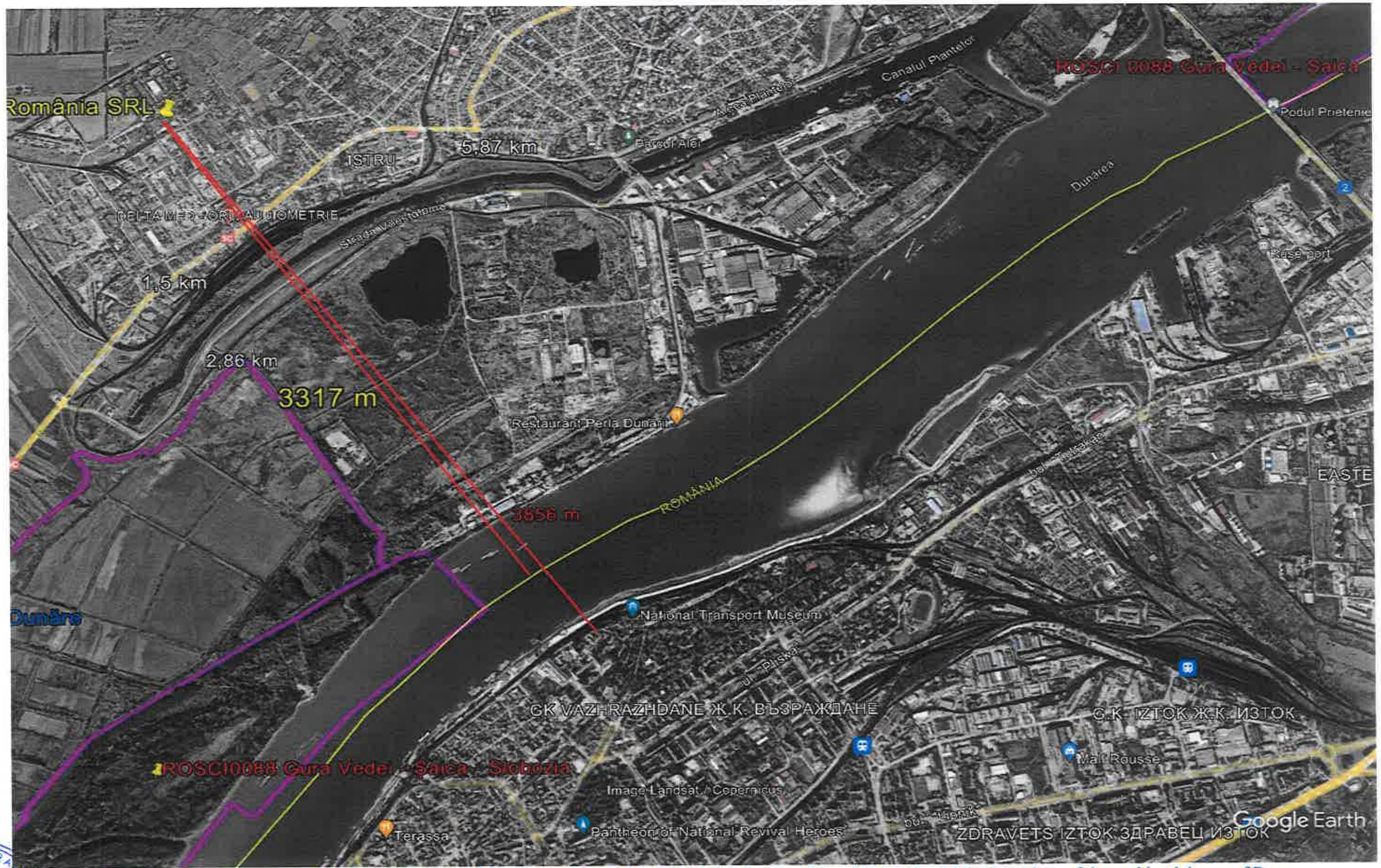

Figure 13: Distances between the boundary of the incinerator site and the border with the Republic of Bulgaria and the boundary of the residential area of Ruse

Centralisation of data obtained from mathematical modelling of pollutant dispersion in the atmosphere:

CARBON MONOXIDE (CO)

Table 5 - Variation of CO concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Ecosystem			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)						
8 h	24 h	1 year	8 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
900			0.4						10000	7000	5000				< VL
2900			0.2												< VL
Bulgaria[2]			**0.1**												< VL
Ruse[3]			0.1												< VL
4000			0.1												< VL
5300			0.08												< VL
6700			0.06												< VL
10000			0.02												< VL
15000			0.008												< VL
	1380			0.1											< VL
	1660			0.08											< VL
	3340			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			0.03											< VL
	5080			0.03											< VL
	10000			0.01											< VL
	15000			0.05											< VL
		760			0.02										< VL
		1290			0.01										< VL
		1500			0.006										< VL
		1900			0.004										< VL
		Bulgaria			**0.001**										< VL
		Ruse			0.001										< VL
		5000			0.001										< VL
		10000			-										< VL
		15000			-										< VL

[2] at the border with Bulgaria at a distance of 3317 m
[3] at the border of the residential area of Ruse at a distance of 3856 m

NO_x

Table 6 - Variation of NOx concentration in relation to distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Annual value (µg/mc)						
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
400			1			200	140	100	40	32	26	30	24	19,5	< VL
1900			0.8												< VL
3390			0.5												< VL
Bulgaria			**0.4**												< VL
Ruse			0.4												< VL
5330			0.3												< VL
355			5												< VL
10000			0.1												< VL
15000			0.05												< VL
	890			0.1											< VL
	1450			0.08											< VL
	2800			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			0.03											< VL
	3680			0.03											< VL
	8000			0.01											< VL
	10000			0.005											< VL
	15000			0.003											< VL
		960			0.01										< VL
		1400			0.007										< VL
		1700			0.005										< VL
		2200			0.003										< VL
		Bulgaria			**0.001**										< VL
		Ruse			0.001										< VL
		3880			0.001										< VL
		7900			0.00032										< VL
		10000			-										< VL
		15000			-										< VL

SO_x

Table 7 - Variation of SO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			Annual value (µg/mc)			
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
540			0.04			350			125	75	50	20	12	8	< VL
3280			0.02												< VL
Bulgaria			**0.02**												< VL
Ruse			0.02												< VL
6160			0.01												< VL
7500			0.008												< VL
10000			0.006												< VL
15000			0.002												< VL
	350			0.005											< VL
	1440			0.003											< VL
	Bulgaria			**0.001**											< VL
	Ruse			0.001											< VL
	3840			0.001											< VL
	6880			0.0005											< VL
	10000			0.0003											< VL
	15000			0.00009											< VL
		800			0.001										< VL
		960			0.0008										< VL
		1200			0.0005										< VL
		1570			0.0003										< VL
		2150			0.0001										< VL
		Bulgaria			**0.00005**										< VL
		Ruse			0.00005										< VL
		3680			0.00005										< VL
		8000			0.000013										< VL
		10000			-										< VL
		15000			-										< VL

TSP

Table 8 - Variation of TSP concentration with distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (µg/mc)				Human health						Ecosystem			Obs.
								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 values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
605				0.02				50	35	25	40	28	20				< VL
3360				0.01													< VL
Bulgaria				**0.01**													< VL
Ruse				0.01													< VL
5390				0.006													< VL
6230				0.005													< VL
10000				0.002													< VL
15000				0.001													< VL
		875				0.002											< VL
		2730				0.001											< VL
		Bulgaria				**0.0006**											< VL
		Ruse				0.0006											< VL
		3770				0.0006											< VL
		4800				0.0005											< VL
		10000				0.0001											< VL
		15000				0.00005											< VL
			980				0.0004										< VL
			1640				0.0001										< VL
			2680				0.00005										< VL
			Bulgaria				**0.00002**										< VL
			Ruse				0.00002										< VL
			4260				0.00002										< VL
			10000				0.00001										< VL
			15000				-										< VL

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HCl

Table 9 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation (µg/mc)			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
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										

HF

Table 10 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1630		0.0006											
2185		0.0005											
2830		0.0004											
Bulgaria		**0.0001**											
Ruse		**0.0001**											
5500		0.0001											
10000		0.00008											
15000		0.00005											
	690		0.00008										
	895		0.00007										
	1410		0.00005										
	1680		0.00004										
	Bulgaria		**0.00002**										
	Ruse		**0.00002**										
	3450		0.00003										
	4950		0.00002										
	10000		-										
	15000		-										

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TOC

Table 11 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1380		0.07											
2610		0.05											
3251		0.04											
Bulgaria		**0.03**											
Ruse		**0.03**											
6045		0.02											
10000		0.007											
15000		0.005											
	715		0.008										
	1300		0.005										
	3370		0.003										
	Bulgaria		**0.001**										
	Ruse		**0.001**										
	6390		0.001										
	7500		0.0008										
	10000		0.0005										
	15000		0.0003										

DIOXINS AND FURANS

Table 12 - 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 (µg /mc x 10)-6				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 values[4]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.0008				0,3									< VL
1600				0.0006													< VL
2250				0.0005													< VL
2900				0.0004													< VL
Bulgaria				**0.0003**													< VL
Ruse				**0.0003**													< VL
5600				0.0002													< VL
	1100				0.0002												< VL
	3050				0.0001												< VL
	3300				0.00009												< VL
	Bulgaria				**0.00009**												< VL
	3750				0.00007												< VL
	Ruse				**0.00007**												< VL
	5030				0.00005												< VL
		900				0.00009											< VL
		1050				0.00008											< VL
		1230				0.00007											< VL
		1600				0.00005											< VL
		Bulgaria				**0.000004**											< VL
		3450				0.00003											< VL
		Ruse				**0.00003**											< VL
		5000				0.00002											< VL
			1680				0.00001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[4] there is no worldwide limit value for the concentration of dioxins and furans in immission but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Table 13 - 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						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 year	limit values[5]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.08				0,3									< VL
1600				0.06													< VL
2250				0.05													< VL
2900				0.04													< VL
Bulgaria				**0.03**													< VL
Ruse				**0.03**													< VL
5600				0.02													< VL
	1100				0.02												< VL
	3050				0.01												< VL
	3300				0.009												< VL
	Bulgaria				**0.009**												< VL
	3750				0.007												< VL
	Ruse				**0.007**												< VL
	5030				0.005												< VL
		900				0.009											< VL
		1050				0.008											< VL
		1230				0.007											< VL
		1600				0.005											< VL
		Bulgaria				**0.004**											< VL
		3450				0.003											< VL
		Ruse				**0.003**											< VL
		5000				0.002											< VL
			1680				0.001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[5] there is no worldwide limit value for the concentration of dioxins and furans in immission but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

8. *the preparation of the Odour Discomfort Management Plan is mentioned without the submission of such a plan*

Answer:

In view of the definition/significance of the **Odour Management Plan**, provided for in Art. 2, point 49^1 of GEO no. 195/2005 on environmental protection, as subsequently amended and supplemented, i.e. "*a plan of measures comprising the stages to be carried out within specified time intervals in order to identify, prevent and reduce odour nuisance, both* ***in the case of new installations/activities*** *or existing installations/activities and in the case of substantial modifications to existing installations/activities*", in conjunction with the provisions of Art. 12, para. 5^1 of the same legislative act, according to which 'the odour nuisance management plan shall be drawn up by economic operators/owners of activities which may generate odour nuisance', it is clear that, in accordance with the legal provisions, the odour management plan is drawn up at the start of the activity, in the procedure for issuing the environmental permit/integrated environmental permit, and not at the design stage, in the procedure for issuing the environmental consent.

9. *No detailed assessment of the presence of fugitive emission sources at the site was provided. The correctness of the calculations from the mathematical modelling of pollutant dispersion cannot be verified.*

- *No detailed assessment of the presence of fugitive emission sources at the site was provided.*

Answer:

No fugitive emission sources will be present on the site under consideration.

- *The correctness of the calculations in the mathematical modelling of pollutant dispersion cannot be verified.*

Answer:

In the subchapter "5.5. AIR AND CLIMATE", under the heading "Concentrations and mass flow rates of pollutants discharged into the atmosphere", all calculations are presented in detail, by which the input data for the mathematical modelling software of the dispersion of all types of pollutants generated by the future activity of the incinerator were determined:

- *For stationary directed sources*

According to the specifications in the technical books of incinerators equipped with LPG burners, compared with the average values according to European standards, for pollutants emitted into the atmosphere we have the values:

Table 14 - Average emissions and EU Standards of basic incinerators (with secondary compartment)

Parameter	Standard values	Measured values at incinerators
Solid particle	30 mg/m³	1.2 mg/m³
Sulphur dioxide	200 mg/m³	2.4 mg/m³
Nitrogen Dioxide*	400 mg/m³	60 mg/m³
Carbon Monoxide	100 mg/m³	78.3 mg/m³

Normally incinerators equipped with:

- secondary combustion chamber for the flue gases from the primary chamber
- dry absorbing system,
- bag filtration system

chimney emission values for these parameters are much lower.

For these reasons, the mathematical modelling of the dispersion of pollutants into the atmosphere resulting from the operation of the incinerator at full capacity will be done with the values in the technical book (those in Table 15).

Burning fuel (LPG) in the incinerator

Centralised data for pollutants emitted from stationary sources are given in the tables below for an hourly consumption of 122.5 l/incinerator = 122.5 l LPG/h:

Table 15 - LPG emission factors

pollutant emitted	NO_X	PM_{10}	CO
FE mg/mc gas	0.001504	0.0001216	0.00064
FE mg/kg LPG	0.00036	0.000029	0.00015
FE mg/l LPG	0.00065	0.000053	0.00028

Table 16 - Emissions from stationary sources of directed pollution

Source name	Pollutant	Mass flow (mg/h)	Gas/air flow rate (m^3/h)	Emission concentration (mg/m)^{3}[6]	Alert threshold (mg/m)^{3}	VLA[7] (mg/m)^{3}
incinerator exhaust stack	NO_X	0.08	5000	0.00005	245	350
	SO_2	-		-	24.5	35
	CO	0.006		0.000004	70	100
	PM_{10}	0.034		0.00002	3.5	5
	VOC	-			n.n.	n.n.

Burning of fuel (LPG) and waste in the incinerator

For burning waste in the incinerator, the required hourly fuel consumption was set at 122.5 l LPG/h for an incinerated waste quantity of 300 kg/h.

The emission values given in the technical book for the analysed incinerator are those in Table 15, respectively:

- Solid particle = 1.2 mg/m³
- Sulphur dioxide = 2.4 mg/m³
- Nitrogen Dioxide = 60 mg/m³
- Carbon Monoxide = 78.3 mg/m³
- HCl = 5.38 mg/m³
- HF = 0.04 mg/m³
- TOC = 4.6 mg/m³

These values are valid for an air flow required to burn the fuel used in the incinerator, respectively: 122.5 x 25 x 0.77 = 2415.88 m³

[6] the worst-case situation is considered when no additional air is added (by forced injection) to the fuel combustion process

[7] Reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11 %.

Taking into account that the IE 1000R-300 incinerator is equipped with an additional injection system (turbine) whose operation is controlled by an automated and computerised temperature and combustion control system and that the injectors are also equipped with turbo blowers which ensure an increased air flow necessary for complete combustion, which are also controlled automatically, an air surplus of between 2000 and 3000 Nm^3 /h is ensured. In this case the average hourly exhaust gas flow will be 5000 Nm^3 /h in which case the concentrations of pollutants in the emissions resulting from waste incineration will be corrected by a coefficient of 0.48 (2415.88 m^3 : 5000 m^3 = 0.48).

Consequently, the concentrations of these pollutants at the outlet of the incinerator stack will be:

- solid particles = 1.2 x 0.48 = 0.579 mg/m^3
- sulphur dioxide = 2,4 x 0,48 = 1,152 mg/m^3
- nitrogen dioxide = 60 x 0.48 = 28.8 mg/m^3
- carbon monoxide = 78.3 x 0.48 = 37.584 mg/m^3
- HCl = 5.38 x 0.48 = 2.58 mg/m^3
- HF = 0.04 x 0.48 = 0.019 mg/m^3
- TOC = 4.6 x 0.48 = 2.208 mg/m^3

Table 17 - Mass flow rates and concentrations of pollutants emitted to the atmosphere in load operation without additional air supply

Source name	Pollutant	Mass flow (g/h)	Gas/air flow rate (m^3 /h)	Emission concentration $(mg/m)^3$[8]	VLE[9] $(mg/m)^3$	Outlet point
LPG combustion + waste	NO_x	144	2416	60	200	incinerator exhaust stack
	SO_2	5.75		2,4	50	
	CO	187.9		78.3	-	
	TSP	2.9		1.2	5	
	VOC	0		0	n.n.	
	HCl	13		5.38	10	
	HF	0.097		0.04	1	
	TOC	11.11		4.6	10	
	PCDD and PCDF	101.47[10]		0.042[11]	0.1[12]	

Table 18 - Mass flow rates and concentrations of pollutants emitted to the atmosphere during load operation with supplementary air supply

Source name	Pollutant	Mass flow (g/h)	Gas/air flow rate (m^3 /h)	Emission concentration $(mg/m)^3$[13]	VLE[14] $(mg/m)^3$	Outlet point
LPG combustion + waste	NO_x	144	5000	28.8	200	incinerator exhaust stack
	SO_2	5.75		1.15	50	
	CO	187.9		37.58	-	

---

[8] the worst-case situation is considered when no additional air is added (by forced injection) to the fuel combustion process

[9] Daily average limit values cf Annex 6, L 278/2013, reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11%.

[10] expressed in ng I.TEQ/Nmc

[11] ibidem

[12] ibidem

[13] the situation when additional air is added (by forced injection) to the fuel combustion process is considered

[14] Daily average limit values cf Annex 6, L 278/2013, reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11%.

	PST	2.9		0.58	5	
	VOC	0		0	n.n.	
	HCl	13		2.6	10	
	HF	0.097		0.019	1	
	TOC	11.11		2.22	10	
	PCDD and PCDF	101.47[15]		0.0035[16]	-	

Normally the incinerator will only operate with additional air supply because in the event of a fault in this process the automation system will initiate the incinerator shutdown sequence. This consists of:

1. stopping the supply of waste to the primary chamber
2. combustion control in primary chamber injectors with injector air supply
3. operation of the incinerator until all waste in the primary combustion chamber has been incinerated
4. stopping the supply of injectors
5. cooling of incinerator chambers
6. troubleshooting
7. restarting the incinerator

The additional air supply does not affect the amount of pollutant emitted into the atmosphere per unit time but only its concentration at the incinerator stack outlet. This will not affect the calculated values of the pollutant concentrations in the immission determined by mathematical modelling, because the modelling is based on the amounts of pollutants emitted per unit time, regardless of their concentration in the emission.

[15] expressed in ng I.TEQ/Nmc
[16] ibidem

Table 19 - Pollutants emitted into the atmosphere from incinerator operation

Name of activity	Sources of air pollutants					Physical characteristics of sources			Exhaust gas parameters		
	Name	LPG consumption l/h	Annual working time hours[17]	Pollutants generated	Quantities of pollutants generated kg/year[18]	Name	Height m	Inside diameter (area) at the top of the basket m^2	Speed m/s	temperature °C	Volume flow m^3/s mass flow mg/s
Waste incineration	Incinerator IE 1000R-300	122.5	**10 h/day x 320 days/year = 3200 h/year**	NO_x	0.614	Flue gas exhaust	10	0.5 m 0.196	7.09	1900	• 1.38 • 0.00002
				SO_2	-						• -
				CO	0.046						• 1.38 • 0.0000017
				PM_{10}	0.261						• 1.38 • 0.000009
				VOC	-						• -

[17] Normally in the incinerator, combustion is initiated when the waste is fed into the incinerator and then the combustion is maintained by the heat input (self-sustaining combustion) from the incinerated waste. For this reason, it has been calculated that, in practice, the LPG supply to the burners for the operation of the incinerator takes on average 10 hours/day.

[18] The calculation is made for 24 h/day operation (worst case where we have maximum emissions to air), without taking into account the phenomenon of self-combustion of waste

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Table 20 - pollutants emitted to the atmosphere from the operation of the incinerator with a waste burning rate of 300 kg/h

Name of activity	**Sources of air pollutants**						**Physical characteristics of sources**			**Exhaust gas parameters**		
	Source name	Amount of waste incinerated kg/h	LPG consumption l/h	Annual working time hours[19]	Pollutants generated	Quantities of pollutants generated kg/year[20]	Name of outlet point	Height m	Inside diameter and area at the top of the basket m/m²	Speed m/s	temperature °C	Volume flow m^3/s mass flow mg/s
Waste incineration	Incinerator IE 1000R-300	300	122.5	GPL: 10 h/day x 320 days/year = 3200 h/year waste: 24 x 320 = 7680 h/year	NO_x	1105.92	Flue gas exhaust	10	0.5 m 0.785 m^2	1.769	190	• 1.38 • 40
					SO_2	44.16						• 1.38 • 1.6
					CO	1443.07						• 1.38 • 52.19
					PST	22.27						• 1.38 • 0.8
					VOC	-						• 1.38
					HCl	99.58						• 1.38 • 3.61
					HF	0.74						• 1.38 • 0.0269
					TOC	85.10						• 1.38 • 3.086
					PCDD and PCDF	0.000768						• 1.38 • 0.0000278

[19] Normally in the incinerator, combustion is initiated when the waste is fed into the incinerator and then the combustion is maintained by the heat input (self-sustaining combustion) from the incinerated waste. For this reason, it has been calculated that, in practice, the LPG supply to the burners for the operation of the incinerator takes on average 10 hours/day.

[20] the calculation is made for 24 h/day operation (worst case where we have maximum emissions to air), without taking into account the phenomenon of self-combustion of waste

For mobile sources

The unit under analysis will use 4 diesel-powered trucks with a capacity of less than 3.5 t, with an average consumption of 11.5/100 km or 8 l/hour.

According to the specific activities to be carried out on the site under consideration, the most demanding situation concerning the simultaneous operation of the engines of the trucks and the forklift truck involves:

- a maximum of 2 trucks present on the site with engines running simultaneously
- simultaneous operation of these two devices maximum 2 hours/day
- a maximum hourly consumption (combustion in the thermal engines of the trucks) of diesel fuel per site of 16 l
- operation of the fork-lift truck for a maximum of 1 hour overlapping with the operation of the truck engines, at an hourly consumption of 6 l diesel fuel
- a maximum hourly consumption (combustion in the thermal engines of the trucks + forklift engine) of diesel fuel per site of 16 + 6 = 22 l/h

The mass flows of pollutants to be discharged with the exhaust gases by the machinery and means of transport used were calculated according to the Methodology for calculating the contributions and taxes due to the Environment Fund, approved by Ministerial Order no. 578/2006, depending on:

- type and capacity of the machine
- the type of fuel used and its sulphur content
- fuel consumption per machine/vehicle
- working regime
- operating conditions

The fuel used shall be diesel fuel with a maximum sulphur content of 0.2 %.

The calculation formula is:

$E_i = FE_i \times N_i \times CC_i$

where: E_i = pollutant mass flow rate

FE_i = emission factor corresponding to the pollutant and the category of the machine/vehicle

N_i = number of vehicles in the category

CC_i = specific diesel consumption for the machine/vehicle category (this must be converted into kg depending on the density of the fuel used - for diesel d = 820 -845 kg/mc (density at 15 degrees C.)

SO_2 emission calculation$_2$:

$ESO_2 = K_s \times C$ (in kg)

Where:

E SO_2 - emission of SO_2

K_S - S content of fuel, expressed in relative mass (kg/kg); for diesel used K_S = 0,002

C - fuel consumption (kg)

Emission factors are used to determine the quantities of pollutants emitted into the atmosphere:

Table 21 - Emission factors

	Mass flow (g/h)						
	NO_X	CH_4	VOC	CO	N O_2	CO_2	SO_2
FE g/km	1.44	0.005	0.42	1.58	0.017	284	-
FE g/kg fuel	15.9	0.055	4.64	17.5	0.188	3138	-

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Table 22 - Mobile emission sources

Source	Pollutant	NO_X	CH_4	VOC	CO	$N\ O_2$	CO_2	SO_2
	FE g/kg fuel	15.9	0.055	4.64	1.58	0.188	3138	2
	hourly diesel consumption l/h - kg/h	Mass flow (g/h)						
special car	16 – 13.6	216.24	0.74	63.1	21.48	2.55	42676.8	27.2
forklift	6 – 5.1	81.09	0.28	23.66	8.05	0.95	16003	10.2
Total	22 – 18.7	297.33	1.02	86.76	29.53	3.5	58679.8	37.4

Bearing in mind the following:

- in reality the mass flow rates of these pollutants are much lower because the machines will never all work simultaneously
- pollutants released in exhaust fumes are released freely into the atmosphere
- dispersion conditions at the site under consideration are very good
- the quantities of dust released during the works and transport are very low, as the site will be worked on only concrete platforms and vehicles will be driven only on asphalt or concrete roads

it is estimated that the pollution generated for the environmental factor air at this stage will be insignificant and will not cause discomfort.

All this information complies with the framework content of a RIM as well as with the requirements of the related guidelines and provides all the necessary elements for any environmental specialist to check whether they are correct or not.

10. The EIA report does not adequately describe, analyse and compare alternatives related to:
a. location
b. activities and technologies
c. the size and scale relevant to the investment proposal and its specific characteristics, indicating and justifying the option chosen, taking into account the environmental impact consequences of the investment proposal

Answer:
In chapter "3. DESCRIPTION OF THE REALIZABLE ALTERNATIVES" these issues have been analysed as follows:

1. location

- "location/site: the incinerator will be located on an industrial platform where in the past industrial activities specific to a chemical plant were carried out; we consider the choice of location in an industrial area better than the option of locating the incinerator in a location with other uses; also the distance from protected areas, defined in the Rules of hygiene and public health on the living environment of the population, approved by Order of the Minister of Health No 119/2014, as amended, is favorable to the implementation of the project in the proposed location."

2. activities and technologies

"technology used: from a technical/technological point of view, the project holder has chosen the best option available at the moment, given the very high costs of implementing the project;"

3. the size and scale relevant to the investment proposal and its specific characteristics, indicating and justifying the option chosen, taking into account the environmental impact consequences of the investment proposal "technology used: from a technical/technological point of view, the project holder has chosen the best option available at the moment, given the very high costs of implementing the project;"

"Assessment of the do-nothing scenario or alternative 0

The "Do-nothing" or "no project" scenario describes what would happen if the project is not implemented at all. This variant is not recommended because:

- As the area's economy and trade develop, more and more animal and medical waste is generated and has to be disposed of by incineration;
- Changes in the waste incineration market have taken place recently, leading to a decrease in incineration capacities at national and local level;
- In many cases, existing incinerators have outdated technologies and no additional equipment to protect the quality of environmental factors.

Incineration is the most effective method, from a public health and environmental point of view, for the disposal of medical and non-hazardous waste for which there are no alternative recycling/recovery options."

Taking into account that the incinerator under consideration will be equipped with a technology that fully complies with European directives and Romanian legislation on pollution standards and that the impact generated on environmental factors:

1. air - will be low and within the limits allowed by European and Romanian legislation
2. water - will be almost neutral and within the limits allowed by European and Romanian legislation
3. soil - will be almost neutral and within the limits allowed by European and Romanian legislation

no other approach to this chapter is justified.

11. *The climatic factors of the Giurgiu area are described without taking into account the ambient air quality and the factors (favourable and unfavourable) for assessing the climatic conditions as favourable/unfavourable for the implementation of a project concerning the incineration of medical and animal waste.*

Answer:

All the assessment in the RIM for the environmental factor air was carried out taking into account all the favourable and unfavourable factors in the Giurgiu area for the assessment of climatic conditions.

The following data were used:

- climate parameter values for the year 2022 recorded at the meteorological station located on Sos. Sloboziei, nr. 195, municipality of Giurgiu
- the values recorded by the weather station equipped by Divori Mediu Expert SRL which was installed in the immediate vicinity of the incinerator site

12. *No assessment is made of the water status - surface and groundwater - of the area of the proposed property, the water quality of the Danube River in the area under consideration, the discharges allowed in the area, the sources of drinking and domestic water in the area, the presence of sanitary protection zones.*

Answer:

Since the activity to be carried out on the study site will not have a direct or significant impact on surface water or groundwater (as demonstrated and argued in the EIR) it is not necessary to assess their condition in the area of the property.

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The assessment of "*water quality of the Danube River in the area under consideration*" is not relevant for the operation of the project considering that the wastewater to be discharged from the site is quantitatively small and insignificant in terms of pollutant loadings. However, the level of these loadings will comply with the legal provisions in force, i.e. they will comply with the provisions of GD 188/2002 amended and supplemented by GD 325/2005, Annex 3, Table 1 (NTPA 001/2005).

discharges permitted in the area concerned - the discharge of waste water from the site under consideration will be made after treatment in the treatment plant to be installed on the incinerator site. These waters will have loading levels for pollutants generated on the site below the values laid down in NTPA 001.

From the outlet of the on-site treatment plant, the water will reach an authorised treatment plant which discharges the treated water into the Danube River, also authorised. Consequently, the discharge of treated waste water on the incinerator site falls within the "*permitted discharges in the area concerned*".

"*sources of drinking and domestic water in the area, presence of sanitary protection zones.*" - there are no such sources in the vicinity of the site.

13. *The EIA report does not consider landform types and their significance in the context of the area under consideration in terms of their importance in natural, social and cultural terms.*

Answer:
All these issues have been analysed in detail in the related chapters of the MDR.

14. *With regard to the analyses carried out in the EIA report, there is a lack of aggregated data on the specific impacts on environmental and population components, which should be structured by construction and operation phases, including emergency situations. In the same context, there is a lack of sufficient data on the significance of the impacts of the proposed project, both in the construction and operation phases.*

Answer:
All these issues have been analysed in detail in the relevant chapters of the RIM, as follows:

Site organisation stage

Site organisation - Construction phase

The construction site will be placed on the existing concrete platform located in the premises of SC Friendly Waste Romania SRL, on an area of approx. 100,0 sq.m representing a temporarily occupied land area.

The site organisation will perform the following functions during the works:

- machinery stationary;
- storage area for equipment and materials until they are put into operation;
- temporary waste storage area during the construction phase.

Once the construction work and equipment installation is completed, the area of land occupied by the site organisation will be cleared.

The site organisation will be located in the NE area of the industrial platform, within the perimeter of the studied site.

Description of the environmental impact of the site organisation work

The impact on the environmental factor air - will be insignificant negative, discontinuous, short-lived and reversible. It will be generated by the operation of the heat engines in the vehicles and machinery serving the site and their movement on the site's internal roads.

Impact on soil environmental factor - will be insignificant negative, discontinuous, short-lived and reversible. It will be generated by the movement of vehicles and machinery servicing the site and the handling of parts of the future construction.

The types of impacts that will manifest themselves on environmental factors are:

Short-term impact on environmental factors - will be caused by emissions of dust, chemical noxious emissions from fuel combustion, noise, vibrations, improperly managed waste, and accidental pollution with petroleum products during construction site working hours;

Long-term impact - will manifest itself on the soil and subsoil through excavation action during the construction period;

Negligible residual impact - will manifest itself on the soil and subsoil through the existence of above and below ground constructions

Sources of pollutants and facilities for the containment, discharge and dispersion of pollutants into the environment during site organisation

For the environmental factor air - heat engines in the vehicles and machinery serving the site and their movement on the internal roads of the site organisation as well as on the external roads.

For environmental factors soil and water

- sanitary facilities generating domestic waste water;
- service staff generating household waste;
- vehicles and machinery which may have accidental loss of fuel and/or lubricants.

In order to avoid negative effects on environmental factors soil and water in case of accidental loss of fuels and/or lubricants by machinery and vehicles servicing the construction activity, a stock of biodegradable absorbent materials will be provided on site.

There is no question of facilities for the containment, discharge and dispersion of pollutants into the environment during the operation of the site organisation outside the location of waste collection containers and site sanitary units.

Site management is provided by specialist personnel in accordance with the legal regulations in force.

To control emissions of pollutants into the environment will be used:

- regular overhauls and technical checks (including emission levels) of the engines of the machinery and vehicles serving the activity;
- the staff operating the machinery/transport equipment ensure that the machinery is working properly and that any faults are rectified quickly;
- avoid empty packaging of heat engines in vehicles and machinery serving the work on site;
- avoid the idling of heat engines in vehicles and machinery used on the site.

Operational stage

All relevant aspects have been analysed in detail in:

Chapter "6. DESCRIPTION OF THE SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROJECT".

Transboundary water impact assessment:

For the assessment of the transboundary impact on water generated by the operation of the incinerator through the awarding of goodness of fit scores, the following analysis is made: the wastewater from the site under consideration reaches the industrial sewerage network after having been treated in the on-site treatment plant where it undergoes an advanced treatment process in order to comply with the provisions of GD 188/2002 amended and supplemented by GD 325/2005, Annex 3, Table 1 (NTPA 001/2005). After purification the water is discharged 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 quality of the receiving water (the Danube River), whose multiannual average flow[21] is 6040 m^3 /s, will not be affected by the wastewater resulting from the treatment of the water from the site analysed 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 Giurgiu municipal wastewater treatment plant.

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 dilution effect of the water discharged into the Danube River is instantaneously 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)

there is no question of cross-border impact.

Transboundary air impact assessment

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 area and having a significant impact on air quality, i.e., those companies holding IPPC permits.

The main economic operators regulated by environmental permits[22] are:

- SC 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 fibers 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.

[21] Flood Risk Management Plan - Danube River

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

- 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 /year) 2
  - 2017 - 211 / 5287 t CO_2 = 3.99
  - 2018 - 211 / 6244 t CO_2 = 3.38 %
  - 2019 - 211 / 5233 t CO_2 = 4.03 %

  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 [23]

Table 23 - 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	23.3	2.25	7.05	22,24	16.82	3,.11	7.98
2011	5.7	21.31	21.31	2.67	5.57	21.27	15.48	4.17	9.13
2012	4.58	19,18	19,18	3.07	7.76	20.62	15.41	3.32	7.5
2013	3.8	17.7	17.7	3.55	5.05	16.5	22.82	3,39	7.47
2017	4.02	19.03	19.03	4.1	3.8	14.32	18.2	4,14	7.75
2015	3.42	12.8	12.8	2.48	3.78	16,28	23,34	3.83	9.57

Table 24 - Average monthly and annual wind speed (m/s) at Giurgiu weather station

Years	Months												Yearly
	I	II	III	IV	V	VI	VII	VIII	XI	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

[23] Air Quality Report 2016

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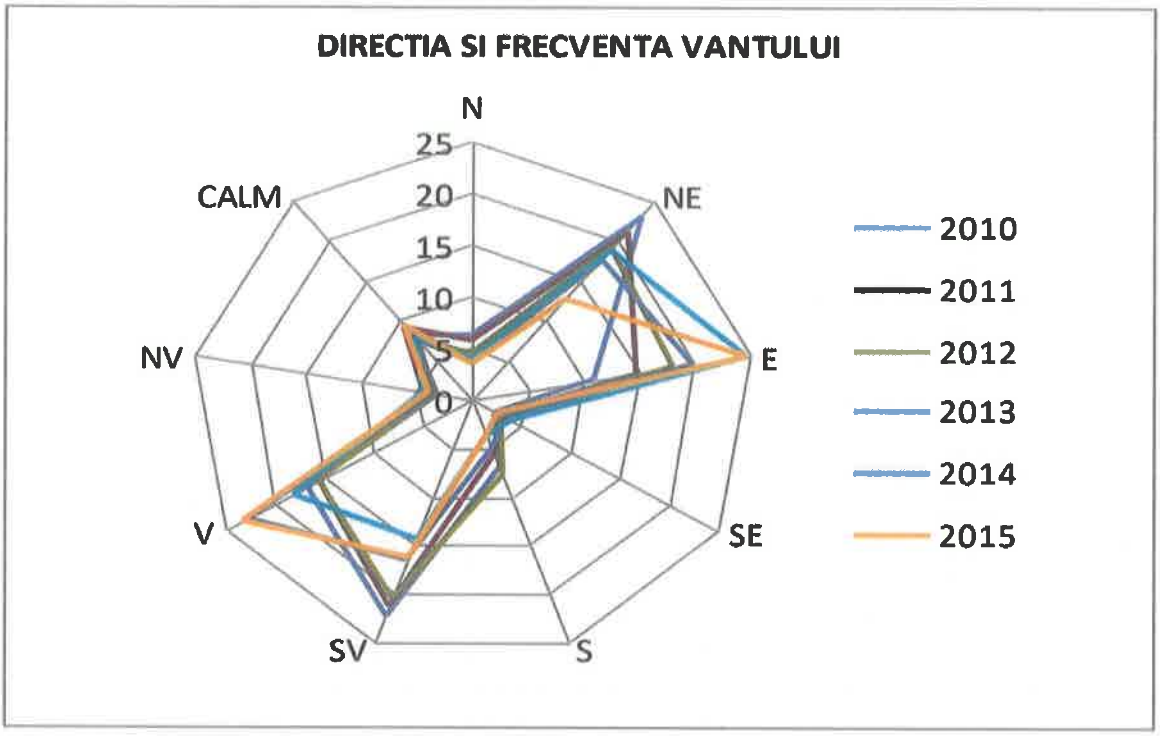

Figure 14 - Diagram representing wind direction and frequency

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).

Conclusions on the impact of the operation of the target on the environmental factor air

The following conclusions can be drawn from the analysis of the emission values generated by the operation of the incinerator and their comparison with the permissible limit values:

- the emission values of NO_x, SO_2, CO, solid particles of the analysed incinerator are totally negligible and are within the ELV
- the propagation distances of air pollutant concentrations (for the highest recorded wind speed = 16.9 m/s compared to the annual average speed = 6.9 m/s) are very small and well below the limit of 534 m (distance to the nearest dwelling)

Taking into account the data presented above, the following conclusions can be drawn regarding the impact of the incinerator activity on the environmental factor air:

1. the direct impact is insignificant and is manifested in a very small area not outside the boundaries of the site
2. there is no indirect or secondary impact

3. there is no significant impact in the medium or long term due to the extremely low quantities of pollutants emitted into the atmosphere and due to the air currents which contribute to their dispersion in a short time
4. the cumulative impact with the existing installations in the analysed area is insignificant (even negligible) taking into account the fact that the emissions from the incinerator activity are at totally negligible values
5. the cross-border impact is insignificant to neutral in all respects (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 of air pollutant propagation with exceedances of the permissible limit values for pollutant concentrations and the nearest boundary point is 3317 m from the flue gas stack of the analysed incinerator.

Impact assessment on the environmental factor soil, subsoil and biodiversity

No cross-border impact is anticipated as a result of the project activity to be implemented.

Cumulative impact at the border with Bulgaria

According to the assessment matrices and charts, based on the credit ratings, of the impacts generated by the operation of the incinerator at the border with Bulgaria we have the following conclusions:

1. The environment is affected within acceptable limits
2. The impact is reduced

15. No specific measures to avoid, prevent and reduce negative impacts are mentioned. There is also no plan for the implementation of measures in the implementation phases of the investment proposal. Also, the EIA report does not show how the installations will be controlled according to the applicable BAT criteria.

Answer:

All these aspects have been dealt with and explained in detail in the chapters of the EIR (8. DESCRIPTION OF MEASURES CONSIDERED TO AVOID, PREVENT, REDUCE OR COMPENSATE FOR ANY SIGNIFICANT ADVERSE EFFECTS ON THE IDENTIFIED ENVIRONMENT and others), as follows:

A. environmental factor air

Project implementation phase

At this stage, vehicles and machinery equipped with engines with pollution standards from EURO 4 onwards will be used.

To limit dust emissions, the tracks on the site will be wetted during very dry periods.

Project operation phase

At this stage, vehicles equipped with engines with pollution standards from EURO 5 onwards will be used for supply, waste removal, etc.

The incinerator burners are state-of-the-art with low NO_x emissions$_x$.

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. To allow the 2 combustion chambers 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. 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 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 the running time of the generating set will be very low and without significant negative impact on the environmental factor air.

B. environmental factor noise and vibration

Noise protection is regulated by the "Noise Protection Regulations", indicative 1, approved by the Ministry of Transport, Construction and Tourism in 2003. In the specific project situation, noise protection is determined according to the noise curve map, drawn up according to the technical specifications of the equipment, made by the German specialist firm DEUTSCHE WINGUARD. In the above mentioned standard the following are mentioned:

The permissible limits of Lech equivalent noise levels outside buildings at a distance of 2.00 m from the façade and a height of 1.30 m above the ground or the level considered for protected buildings are given in the table below:

Table 25 - Permissible noise level limits near protected buildings

No. crt.	Protected building	Permissible limit of noise level dB equivalent (A)	Order number of the Cz curve corresponding
1.	Housing, hotels, hostels, guest houses	55	50
2.	Hospitals, polyclinics, dispensaries	45	40
3.	Schools	55	50
4.	Kindergartens, nurseries	50	45
5.	Office buildings	65	60

Noise sources are represented by:

- machinery carrying out construction work
- means of transport participating in the construction works
- means of transporting waste for incineration
- incinerator during operation

Noise and vibration levels produced

No noise and vibration level determinations have been carried out; we can estimate that the noise level will not exceed, at the boundary of the property, the maximum value allowed by the Order of the Minister of Health no. 119/2014 approving the hygiene and public health norms concerning the living environment of the population.

C. environmental factor water - only groundwater is referred to as there is no surface water in the area.

Causes that may lead to potential pollution of surface water as well as groundwater, through the infiltration of pollutants into the groundwater, during the implementation of the project activity as well as during the operational phase can be related to:

- accidents in the normal operation of machinery used in construction work (crane, fork-lift truck) leading to possible accidental loss of lubricants and/or fuel
- possible accidental damage to the diesel tanks of the vehicles serving the activity
- possible accidental loss of lubricants by machinery or vehicles servicing the activity

Even in the unlikely event of having such situations considering the issues:

- all work on the site is carried out only on concrete platforms
- there are no surface waters nearby. The nearest surface water is Lake Giurgiu at a distance of 1037 m

it is virtually impossible for surface water pollution from the company's activities to occur.

However, there remains a very low probability of accidental groundwater pollution if preventive measures are not taken.

In order to avoid accidental pollution of surface water and groundwater it is recommended:

- the functionality of the engines and other equipment shall be checked in good time
- the fuel tanks of the vehicles serving the activity shall be checked at all times
- a ban on the development of fuel and oil depots in places other than those that already exist and meet environmental protection standards;
- maintenance and repair work on machinery and means of transport shall be carried out only in specially designated areas outside the construction area;
- the washing of machinery on the premises is prohibited except for disinfection washing
- the supply of diesel oil and lubricants will be carried out in such a way as to avoid accidental losses and to protect the environment;

- any pollution of surface water or groundwater, regardless of the causes of its pollution, shall be immediately reported to the Buzău Basin Administration - Giurgiu Water Management System and the Giurgiu Environmental Guard.

D. Soil and subsoil environmental factor

Measures, facilities and arrangements for soil and subsoil protection

The following measures have been foreseen to avoid soil pollution:

- the functionality of the thermal engines of the vehicles used for construction work shall be checked in due time
- no fuel and oil depots are set up in places other than those equipped in accordance with legal requirements;
- maintenance and repair work on machinery and means of transport shall be carried out only in specially designated places;
- no washing of machinery and vehicles shall be carried out on the premises, with the exception of washing for the sanitation of means of transport of non-hazardous animal waste;
- the supply of diesel and lubricants to machinery is carried out under all conditions to avoid accidental losses and to protect the environment in specially equipped places - fuel distribution stations;
- all machinery and vehicles used in the construction work and then in the incineration work run on designated roads and are parked only on concrete platforms
- waste for incineration shall be temporarily stored only in special containers in specially designated areas
- the waste from the incineration process is collected in special containers in an appropriate area.

Answer:

"the EIA report does not show how installations will be controlled in accordance with the applicable BAT criteria"

In accordance with the legal provisions in force, upon completion of the investment, the beneficiary of the investment and the representatives of the Giurgiu Environmental Protection Agency will receive the works of the environmental agreement. They will verify that all the conditions imposed on the investment by the environmental agreement, including the BAT provisions, have been respected.

During the operation period of the investment, the National Environmental Guard - Giurgiu County Commissionerate is in charge of verifying compliance with the conditions imposed by the Giurgiu Environmental Protection Agency through the environmental permit it will issue, including the BAT provisions.

16. The documentation submitted does not present the results of consultations with specialised agencies, the public and competent authorities at various stages of the procedure

Answer:

Such a requirement is not found in the framework content of the RIM nor in the guidelines for the preparation of such a study.

In the preparation of the RIM, account was taken of the provisions of the opinions required by the planning certificate.

With regard to the relevant requests received from the public during the public debate that took place on 08.09.2023 and which were then analysed during the first CAT meeting that took place at APM Giurgiu after this debate, these requests were taken into account and all of them were answered by the elaboration of the RIM - REV. 1 study.

II. Observations on environmental components and factors

Comments on the water component

1. *Chemical substances identified as priority substances by Directive 2008/105/CC setting environmental quality standards in the field of water, as supplemented by Directive 2013/39/EU on priority substances in the field of water, were not analysed at the entrance to the incinerator site, except for partial analysis of furan and dioxins. These substances, which enter the incinerator as municipal or medical waste, will be deposited on the incinerator walls, will be released via effluent when the incinerator is flushed, will be released into the air, and will form a diffuse source of air contaminants that will enter surface waters via atmospheric processes.*

- *Chemical substances identified as priority substances by Directive 2008/105/CC setting environmental quality standards in the field of water, as supplemented by Directive 2013/39/EU on priority substances in the field of water, were not analysed at the entrance to the incinerator site, except for partial analysis of furan and dioxins.*

Answer:

In the related chapters of the RIM, absolutely all substances that will be found in the wastewater generated on the analysed site have been analysed according to the requirements of the RIM framework content and related guidelines.

Regarding the statement "*except for partial analysis of furan and dioxins.*" these pollutants will not be found at all in the waste water generated on the site and only in extremely small quantities and at concentration levels well below the internationally accepted limit values **only in the flue gas to be discharged into the air**.

- *These substances, which enter the incinerator as municipal or medical waste, will be deposited on the walls of the incinerator, will be released through the effluent when the incinerator is flushed, will be released into the air, and will form a diffuse source of air contaminants that will enter surface waters through atmospheric processes.*

The chapters in the RIM describe in detail how the incinerator works and the processes that take place in the two combustion chambers.

According to the basic principle of incinerator operation we have the following situations:

- waste for incineration is introduced into the primary combustion chamber
- by injecting fuel and initiating the combustion process **the entire amount of waste fed into the primary combustion chamber is incinerated and converted into ash**
- under no circumstances is there any situation where even the smallest amount of unburned waste remains on the walls of the primary combustion chamber
- only the flue gases resulting from the incineration of waste in the primary combustion chamber are incinerated in the secondary combustion chamber
- **the walls of the primary combustion chamber and the secondary combustion chamber are never washed**

2. *It is necessary to analyse and provide for measures to prevent the impact of all substances defined by Directive 2008/105/EC and Directive 2013/39/EU, as well as other possible pollutants, on the one hand as point pollutants and on the other hand as diffuse airborne water and soil pollutants.*

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Answer:

As explained in the previous paragraph, there will be no such substances in the wastewater generated on the site from the operation of the incinerator.

As presented in subchapter "2.4.1. WATER POLLUTION" we have:

From the activity carried out by Friendly Waste Romania SRL on the analysed location, domestic wastewater and technological wastewater are the result. The wastewater will be discharged into the existing industrial sewage system in the area and will be collected initially in the basin with V = 10 m3 that will be placed on the analysed site. From the tank, the wastewater will be taken by the pre-treatment station and discharged into the existing sewerage network in the area (DELTA GAS SRL).

Domestic waste water - Construction phase

The average number of staff involved in the construction work is 10.

The domestic wastewater will be collected in the basins provided in the ecological toilets and will be disposed of by the company providing the services for the authorised contractor.

The pollutants discharged daily into domestic wastewater and their quantities are shown experimentally in the table below.

Table 26 - Average experimental wastewater composition for the construction period

Parameter	Load (g/person/day)	Concentrati on (mg/litre)	Total load for 10 persons (kg/day) minimum and maximum limit	
Total solid	115-170	680-1000	1,150	1,700
Volatile solids	65-85	380-500	0,650	0,850
Solid suspensions	35-50	200-290	0,350	0,500
Suspended volatile solids	25-40	150-240	0,250	0,400
BOD5	35-50	200-290	0,350	0,500
CCOCr	115-125	680-730	1,150	1,250
Total nitrogen	6 - 17	35-100	0,060	0,170
Ammonium	1 - 3	6 - 18	0,010	0,030
Nitrites, nitrates	<1	<1	<1	<1
Total phosphorus	3 - 5	18-29	0,030	0,050
Phosphates	1 - 4	6 - 24	0,010	0,040
Coliform, total	-	1010-1012	-	-
Faecal coliform	-	108-1010	-	-

Period of exploitation/operation of the site

Eight people will be employed for the exploitation period. They will work in shifts to cover a 24 hour/day work schedule. The load capacity of the 8 newly employed persons for domestic waste water is shown in the table below:

Table 27 - Domestic sewage load related to staff during the operating period

Parameter	Load (g/person/day)	Concentrati on (mg/litre)	Total load for 8 persons (kg/day) minimum and maximum limit	
Total solid	115-170	680-1000	0,92	1,36
Volatile solids	65-85	380-500	0,52	0,68
Solid suspensions	35-50	200-290	0,28	0,4

Suspended volatile solids	25-40	150-240	0,2	0,32
BOD5	35-50	200-290	0,28	0,4
CCOCr	115-125	680-730	0,92	1
Total nitrogen	6 - 17	35-100	0,048	0,136
Ammonium	1 - 3	6 - 18	0,008	0,024
Nitrites, nitrates	<1	<1	<1	<1
Total phosphorus	3 - 5	18-29	0,024	0,04
Phosphates	1 - 4	6 - 24	0,008	0,032
Coliform, total	-	1010-1012	-	-
Faecal coliform	-	108-1010	-	-

The estimation of the values of domestic wastewater loadings resulting from the activity of S.C. Friendly Waste Romania S.R.L. on the analyzed location was made by corroborating the average number of inhabitants in relation to the number of hours with the values of the "Average composition of domestic wastewater (Imhoff - 1990) in g/place/day".

Technological waste water

The technological wastewater is generated only during the operational phase of the site, from:

- washing bins and the bodies of vehicles that will transport animal waste;
- Washing of the concrete platforms in the loading area of the waste incinerator. The frequency of washing will be about once a week and low-flow pressure washing equipment will be used.
- washing of the concrete platform intended for unloading and possible temporary storage of non-hazardous waste. The frequency of washing will be about once a week and low-flow pressure washing equipment will be used.

Analysing the water loadings based on the results of analyses carried out at other sites with the same activity, in conjunction with the volumes of industrial wastewater expected to be generated at the site under analysis, the results are shown in the table below:

Table 28: Estimated loadings to process water during the operation of the objective

Parameter	Analysis report values	U.M.	Estimated maximum volume for domestic waste water m³			Maximum volume loads kg			VLA acc. NTPA 002/2005	VLA acc. NTPA 002/2005
			daily	lunar	annual	daily	lunar	annual		
pH	6.70	unit. pH							6.5 – 8.5	6.5 – 8.5
Total suspended solids	30	mg/l	3.479	104.37	1494.4	0.144	3.072	36.86	350	35
CCOCr	120	mgO_2/l				0.576	12.288	147.456	500	125
CBO_5	42	mgO/l_2				0.202	4,3	54.13	300	25
Ammonium	8.74	mg/l				0.042	0.895	11.26	30	2
Total phosphorus	0.89	mg/l				0.0043	0.091	1.147	5	1

The indicator values in domestic wastewater will be within the limits set in H.G. 352/2005, NTPA 001.

The operation of the dry absorbing system does not result in waste water, as it is a dry system.

3. *The transboundary water impact assessment is based on the principle of dilution, which is unacceptable as dilution is not an acceptable method of achieving quality standards, especially as it could lead to the contamination of drinking water supplying some of the Bulgarian settlements along the Danube River. It is also pointed out that the treatment plant was upgraded in accordance with IP188/2002, supplemented and amended by IP325/2005, which, in the light of scientific progress, is considered an outdated standard.*

- *The transboundary water impact assessment is based on the principle of dilution, which is unacceptable as dilution is not an acceptable method of achieving quality standards, especially as it could lead to the contamination of drinking water supplying some of the Bulgarian settlements along the Danube River.*

Answer:

The claim is totally erroneous because the content of the study makes no reference to such a method. On the contrary, it has been extensively presented both the equipment with a treatment plant that will ensure at the outlet for the effluent a load of pollutants specific to the activity evaluated at a level below the values provided for in the legislation in force, namely HG 325/2005, Annex 3, Table 1 (NTPA 001/2005).

In chapter "6. DESCRIPTION OF THE SIGNIFICANT EFFECTS THAT THE PROJECT MAY HAVE ON THE ENVIRONMENT", under the heading "***Transboundary water impact assessment"*** we have the following information:

For the assessment of the transboundary impact on water generated by the operation of the incinerator through the awarding of the goodness of fit scores, the following analysis is made: the wastewater resulting from the analysed site reaches the industrial sewage network after having been treated in the on-site treatment plant where it has been subjected to an advanced treatment process in order to comply with the provisions of GD 188/2002 modified and completed by GD 325/2005, Annex 3, Table 1 (NTPA 001/2005) . After treatment the water is discharged 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 quality of the receiving water (the Danube River), whose multiannual average flow[24] is 6040 m^3 /s, will not be affected by the wastewater resulting from the treatment of the water from the site analysed 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 Giurgiu municipal wastewater treatment plant.

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 next sub-point also states that when discharging treated water into the Danube River (water that fully complies with the load limits for pollutants in their composition below the legal limits laid down in GD 325/2005, Annex 2, Table 1 (NTPA 01/2005), **the dilution effect appears instantly** - which is absolutely normal in such cases. This effect has not been presented as a method of reducing the

[24] Flood Risk Management Plan - Danube River

concentration of pollutants in the wastewater discharged at the outlet of the treatment plant but as a simple logical and normal consequence.

- *It is also pointed out that the sewage treatment plant was upgraded in accordance with IP188/2002, supplemented and amended by IP325/2005, which in the light of scientific progress is considered to be an outdated standard.*

Answer:
Totally erroneous, because nowhere in the RIM study is there any reference to this.

4. *It is necessary to consider all pollutants, their concentrations and their cumulative effect in contact with surface water.*

Answer:
As presented in the above answers, absolutely all the pollutants likely to be present in the wastewater generated on the site have been considered and analysed and their effects have been analysed in detail in the situation when the wastewater generated on the site and treated in the treatment plant to be installed reaches the Danube river.

The RIM also argued that there is no possibility of wastewater generated at the incinerator site reaching groundwater.

5. *The impact of substances and elements that will be deposited on the walls of the incinerator and that will subsequently enter the water when the plant is washed out must be considered*

The chapters in the RIM describe in detail how the incinerator works and the processes that take place in the two combustion chambers.
According to the basic principle of incinerator operation we have the following situations:

- waste for incineration is introduced into the primary combustion chamber
- by injecting fuel and initiating the combustion process **the entire amount of waste fed into the primary combustion chamber is incinerated and converted into ash**
- under no circumstances is there any situation where even the smallest amount of unburned waste remains on the walls of the primary combustion chamber
- only the flue gases resulting from the incineration of waste in the primary combustion chamber are incinerated in the secondary combustion chamber
- **the walls of the primary combustion chamber and the secondary combustion chamber are never washed**

6. *It is necessary to ensure that priority substances and priority hazardous substances are not discharged into the Danube River.*

Answer:
The priority substances and priority hazardous substances are listed below

Dangerous substances in Lists I and II and priority substances / primarily hazardous

Table 3

CAS No	Substance	List I	List II	List of priority substances / primarily hazardous
1	2	3	4	5
71-55-6	1,1,1,-trichloroethane		X	
79-34-5	1,1,2,2-tetrachloroethane		X	
79-00-5	1,1,2-trichloroethane		X	

76-13-1	1,1,2-trichlorotrifluoroethane		X	
75-34-3	1,1-dicloretan		X	
75-35-4	1,1-dichloroethene		X	
87-61-6	1,2,3-trichlorobenzene	X		X
95-94-3	1,2,4,5-tetrachlorbenzene		X	
120-82-1	1,2,4-trichlorobenzene	X		X
106-93-4	1,2-dibromethane		X	
95-50-1	1,2-dichlorobenzene		X	
107-06-2	1,2-dicloretan	X		X
540-59-0	1,2-dichloroethene		X	
75-09-2	dichloromethane			X
78-87-5	1,2-dichlorpropan		X	
108-70-3	1,3,5-trichlorobenzene	X		X
96-23-1	1,3-dichloro-2-propanol		X	
541-73-1	1,3-dichlorobenzene		X	
542-75-6	1,3-dichloropropene		X	
106-46-7	1,4-dichlorobenzene		X	
97-00-7	1-chloro-2,4-dinitrobenzene		X	
90-13-1	1-chloro-naphthalene		X	
78-88-6	2,3-dichloropropene		X	
93-76-5	2,4,5-trichlorophenoxyacetic acid		X	
not applicable	2,4-D salts and esters		X	
120-83-2	2,4-dichlorophenol		X	
94-75-7	2,4-dichlorophenoxyacetic acid		X	
95-85-2	2-amino-4-chlorophenol		X	
615-65-6	2-chloro-4-methylaniline		X	
95-51-2	2-chloraniline		X	
107-07-3	2-cloretanol		X	
88-73-3	2-nitrosochlorbenzene		X	
95-57-8	2-chlorophenol		X	
95-49-8	2-chlorotoluene		X	
108-42-9	3-chloraniline		X	
121-73-3	3-nitrosochlorbenzene		X	
108-43-0	3-chlorophenol		X	
108-41-8	3-chlorotoluene		X	
92-87-5	4,4-diaminodiphenyl		X	
89-63-4	4-chloro-2-nitroaniline		X	
89-59-8	4-chloro-2-nitrotoluene		X	
59-50-7	4-chloro-3-methyleneol		X	
106-47-8	4-chloraniline		X	
100-00-5	4-chlornithrobenzene		X	
106-48-9	4-chlorophenol		X	
106-43-4	4-chlorotoluene		X	
15972-60-8	Alaclor			X
309-00-2	Aldrin	X		X
107-05-1	Allyl chloride		X	
98-87-3	alpha, alpha, -dichlortoluene		X	
120-12-7	Anthracene		X	X
7440-36-0	Antimony (stibium)		X	
7440-38-2	Arsen		X	
1327-53-3	Arsenic (III) oxide (As 2O3)		X	
1912-24-9	Atrazine		X	X
2642-71-9	Azinphos ethyl		X	
86-50-0	Azinphos methyl		X	
7440-39-3	Bariu		X	
25057-89-0	Bentazone		X	
71-43-2	Benzen		X	X
56-55-3	Benzo-a-anthracene		X	X

50-32-8	Benzo-a-pyrene		X	X
205-99-2	Benzo-b-fluoroanthene		X	X
191-24-2	Benzo-g,h,i-perylene		X	X
207-08-9	Benzo-k-fluoroanthene		X	X
100-44-7	Benzylchloride		X	
7440-41-7	Beryllium		X	
92-52-4	Biphenyl		X	
7440-42-8	Boron		X	
7440-43-9	Cadmium	X		X
not applicable	Cadmium compounds	X		X
57-74-9	Clordan		X	
6164-98-3	Chlordimeform		X	
79-11-8	Chloroacetic acid		X	
85535-84-8	Chloralkanes C10-C13			X
47-90-6	Chlorfenvinphos			X
2921-88-2	Chlorpyrifos			X
108-90-7	Chlorobenzene		X	
25586-43-0	Chlor-naphthalene		X	
not applicable	Chlor-nitrotoluene		X	
126-99-8	Chlorpropene		X	
7440-47-3	Chrom		X	
7440-48-4	Cobalt		X	
7440-50-8	Copper		X	
56-72-4	Cumafos		X	
53-19-0	DDD,2,4-isomer	X		X
75-54-8	DDD,4,4-isomer	X		X
13312-58-8	DDE,2,4-isomer	X		X
72-55-9	DDE,4,4-isomer	X		X
not applicable	DDT and metabolites (DDD, DDE)	X		X
789-02-6	DDT,2,4-isomer	X		X
50-29-3	DDT,4,4-isomer	X		X
126-75-0	Demeton-s		X	
919-86-8	Demeton-s-methyl		X	
301-12-2	Demeton-S-methyl sulfoxide		X	
683-18-1	Dibutyl chloride		X	
818-08-6	Dibutyl oxide		X	
not applicable	Dibutyl salt		X	
27134-27-6	Dichloraniline (all isomers)		X	
not applicable	Dichlor-diamino-diphenyl		X	
108-60-1	Dichlor-di-iso-propyl-ether		X	
75-09-2	Dichloromethane		X	X
not applicable	Dichlor-nitrobenzene (all isomers)		X	
120-36-5	Dichlorprop		X	
62-73-7	Dichlorvos		X	
60-57-1	Dieldrin	X		X
109-89-7	Diethylamine		X	
not applicable	Brominated Diphenylethers			X
60-51-5	Dimetoat		X	
124-40-3	Dimethylamine		X	
298-04-4	Disulfoton		X	
54-1	Diuron			X
115-29-7	Endosulfan		X	X
72-20-8	Endrin	X		X
106-89-8	Epichlorohydrin		X	
100-41-4	Ethylbenzene		X	
117-81-7330	2-ethylhexyl diphthalate			X
122-14-5	Fenitrotion		X	
55-38-9	Fention		X	

319-84-6	HCH,alpha-isomer	X		X
319-86-8	HCH,delta-isomer	X		X
58-89-9	HCH,gamma-isomer (lindane)	X		X
608-73-1	HCH, mixed isomers	X		X
76-44-8	Heptachlor		X	
118-74-1	Hexachlorobenzene	X		X
87-68-3	Hexachlorobutadiene	X		X
67-72-1	Hexachloroethane		X	
465-73-6	Isodrin	X		X
98-82-8	Isopropyl benzene		X	
34123-59-6	Isoproturon			X
7439-92-1	Plumb		X	X
330-55-2	Linuron		X	
121-75-5	Malation		X	
94-74-6	MCPA		X	
93-65-2	Mecoprop		X	
7439-97-6	Mercury	X		X
10265-92-6	Metamidophos		X	
7786-34-7	Mevinfos		X	
7439-98-7	Molybdenum		X	
1746-81-2	Monolinuron		X	
91-20-3	Naphthalene		X	X
7440-02-0	Nickel		X	X
25154-52-3	Nonyl-phenols			X
1806-26-4	Octylphenols			X
1113-02-6	Omethoate		X	
not applicable	Polyaromatic hydrocarbons (PAH)		X	X
56-38-2	Etil-paration		X	
298-00-0	Methyl-partition		X	
1336-36-3	Polychlorinated biphenyls (PCBs)		X	X
608-93-5	Pentachlorbenzene			X
87-86-5	Pentachlorophenol	X		X
85-01-8	Phenanthrene		X	X
126-73-8	Phosphoric acid tri-n-butyl ester		X	
14816-18-3	Phoxim		X	
709-98-8	Propanil		X	
7782-49-2	Selenium		X	
7440-22-4	Silver		X	
122-34-9	Simazine		X	X
13494-80-9	Tellurium		X	
1461-25-2	Tetrabutyltin		X	
127-18-4	Tetrachloroethylene	X		X
56-23-5	Tetrachloromethane	X		X
7440-28-0	Taliu		X	
7440-31-5	Tin		X	
7440-32-6	Titanium		X	
108-88-3	Toluene		X	
24017-47-8	Triazophos		X	
56-35-9	Tributyltin oxide		X	X
12002-48-1	Trichlorobenzene (all isomers)	X		X
79-01-6	Trichlorethene	X		X
52-68-6	Trichlorfon		X	
67-66-3	Trichloromethane	X		X
not applicable	Trichlorophenol		X	
1582-09-8	Trifluralin		X	X
900-95-8	Triphenyltin acetate		X	
639-58-7	Triphenyltin chloride		X	
76-87-9	Triphenyltin hydroxide		X	

7440-61-1	Uranium		X	
7440-62-2	Vanadium		X	
75-01-4	Vinyl chloride		X	
1330-20-7	Xylene (m-,o-,p-)		X	
7440-66-6	Zinc		X	

There will be no such substances on the incinerator site.

7. *The description of the location and terrain does not take into account the fact that the former chemical plant on the site where the facility is to be built has had negative, transboundary impacts for many years. In this respect, the documents do not take into account the region, but only the local site on which the plant is to be built.*

- *The description of the location and terrain does not take into account the fact that the former chemical plant on the site where the facility is to be built has had negative, transboundary impacts for many years.*

Answer:

The site analysis took into account the previous use of the land:

"location/site: the incinerator will be located on an industrial platform where in the past industrial activities specific to a chemical plant were carried out; we consider the choice of location in an industrial area better than the option of locating the incinerator in a location with other uses; also the distance from protected areas, defined in the Rules of hygiene and public health on the living environment of the population, approved by Order of the Minister of Health No 119/2014, as amended, is favorable to the implementation of the project in the proposed location."

"The land proposed for the implementation of the project is located inside the Industrial Platform 2 of the former Giurgiu Chemical Plant. On the site are 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."

"Given the area where the project is implemented, the industrial platform of a former chemical plant, the works foreseen in the project do not affect organic matter or other soil degradation phenomena, i.e. erosion, subsidence, sealing."

"The whole south-western part of the municipality (the area where the incinerator is to be located) is marked by a desolate landscape (which was once heavily industrialised) caused by the polluting activities that took place in the past and whose traces are still visible today. In the southern part of the project site (of the industrial platform no. 2 of the former chemical plant) there is platform no. 1 of the former chemical plant and in the western part there is CET Giurgiu".

"The implementation of the project can have a positive impact on the landscape by building a modern building, which also involves upgrading the access roads."

"Taking into account the above mentioned aspects and the location of the project in the premises of the former Giurgiu Chemical Plant, at a distance of approx. 1430 m from the protected natural area of Community interest, we consider that the project *"CONSTRUCTION OF HALL BUILDING, VIDANJABLE CONCRETE BASIN, CONCRETE PLATFORMS, FENCES, LIGHTING SYSTEM, EXECUTION OF DRILLING AND INTERNAL NETWORK FOR WATER SUPPLY AND SEWERAGE, EXPANSION OF WASTEWATER PRETREATMENT STATION, EXPANSION OF MEDICAL WASTE INCINERATOR WITH ANNEXED FACILITIES"*, alone or in combination with other projects, is not likely to significantly affect the Special Protection Area for Birds ROSPA0108 Vedea - Danube."

As regards the analysis of the impact of the analysed incinerator on environmental factors by comparison with the effects generated on these factors by the previous operation of the Giurgiu Chemical

Plant, taking into account all the calculations and conclusions of the RIM study it is more than obvious that:

1. the types of pollutants emitted from the operation of the chemical plant in the past are not related to the types of pollutants emitted from the operation of the incinerator
2. the pollutants emitted from the operation of the chemical plant in the past were of an entirely different nature and much more dangerous than those generated from the operation of the incinerator
3. the quantities of pollutants emitted from the operation of the chemical plant in the past were enormous and infinitely greater than the quantities of pollutants generated from the operation of the incinerator

- *In this respect, the documents do not take into account the region, but only the local site on which they are to be built.*

Answer:

We do not understand what documents are referred to.

In the RIM study all analyses and assessments were done at both site and wider area level. It is not appropriate to do an analysis at the level of a region, as the term is defined - "Large territorial unit with relatively homogeneous characteristics".

The analysis on the environmental factors likely to be affected was done over a very large area, i.e., for the environmental factor air up to a distance of more than 15000 m from the point of emission generation. Thus, the diagrams resulting from the mathematical modelling of air pollutants showed how the level of concentrations in the immission is assessed for certain averaging periods (as required by law), as can be seen in the tables below:

CARBON MONOXIDE (CO)

Table 29 - Variation of CO concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Ecosystem			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)						
8 h	24 h	1 year	8 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
900			0.4						10000	7000	5000				< VL
2900			0.2												< VL
Bulgaria[25]			**0.1**												< VL
Ruse[26]			**0,1**												
4000			0.1												< VL
5300			0.08												< VL
6700			0.06												< VL
10000			0.02												< VL
15000			0.008												< VL
	1380			0.1											< VL
	1660			0.08											< VL
	3340			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			**0.03**											
	5080			0.03											< VL
	10000			0.01											< VL
	15000			0.05											< VL
		760			0.02										< VL
		1290			0.01										< VL
		1500			0.006										< VL
		1900			0.004										< VL
		Bulgaria			**0.001**										< VL
		Ruse			**0.001**										
		5000			0.001										< VL
		10000			-										< VL
		15000			-										< VL

[25] at the border with Bulgaria at a distance of 3317 m
[26] at the border of the residential area of Ruse at a distance of 3856 m

NO_x

Table 30 - Variation of NOx concentration in relation to distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Annual value (µg/mc)						
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
400			1			200	140	100	40	32	26	30	24	19,5	< VL
1900			0.8												< VL
3390			0.5												< VL
Bulgaria			**0.4**												< VL
Ruse			**0.4**												
5330			0.3												< VL
355			5												< VL
10000			0.1												< VL
15000			0.05												< VL
	890			0.1											< VL
	1450			0.08											< VL
	2800			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			**0.03**											
	3680			0.03											< VL
	8000			0.01											< VL
	10000			0.005											< VL
	15000			0.003											< VL
		960			0.01										< VL
		1400			0.007										< VL
		1700			0.005										< VL
		2200			0.003										< VL
		Bulgaria			**0.001**										< VL
		Ruse			**0.001**										
		3880			0.001										< VL
		7900			0.00032										< VL
		10000			-										< VL
		15000			-										< VL

SOx

Table 31 - Variation of SO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			Annual value (µg/mc)			
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
540			0.04			350			125	75	50	20	12	8	< VL
3280			0.02												< VL
Bulgaria			**0.02**												< VL
Ruse			**0.02**												
6160			0.01												< VL
7500			0.008												< VL
10000			0.006												< VL
15000			0.002												< VL
	350			0.005											< VL
	1440			0.003											< VL
	Bulgaria			**0.001**											< VL
	Ruse			**0.001**											
	3840			0.001											< VL
	6880			0.0005											< VL
	10000			0.0003											< VL
	15000			0.00009											< VL
		800			0.001										< VL
		960			0.0008										< VL
		1200			0.0005										< VL
		1570			0.0003										< VL
		2150			0.0001										< VL
		Bulgaria			**0.00005**										< VL
		Ruse			**0.00005**										
		3680			0.00005										< VL
		8000			0.000013										< VL
		10000			-										< VL
		15000			-										< VL

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TSP

Table 32 - Variation of TSP concentration with distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (µg/mc)				Human health						Ecosystem			Obs.
								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 values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
605				0.02				50	35	25	40	28	20				< VL
3360				0.01													< VL
Bulgaria				**0.01**													< VL
Ruse				**0.01**													
5390				0.006													< VL
6230				0.005													< VL
10000				0.002													< VL
15000				0.001													< VL
		875				0.002											< VL
		2730				0.001											< VL
		Bulgaria				**0.0006**											< VL
		Ruse				**0.0006**											
		3770				0.0006											< VL
		4800				0.0005											< VL
		10000				0.0001											< VL
		15000				0.00005											< VL
			980				0.0004										< VL
			1640				0.0001										< VL
			2680				0.00005										< VL
			Bulgaria				**0.00002**										< VL
			Ruse				**0.00002**										
			4260				0.00002										< VL
			10000				0.00001										< VL
			15000				-										< VL

HCl

Table 33 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation (µg/mc)			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
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										

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HF

Table 34 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (μg/mc)		Human health						Vegetation			Obs.
				Hourly value (μg/mc)			Annual value (μg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1630		0.0006											
2185		0.0005											
2830		0.0004											
Bulgaria		**0.0001**											
Ruse		**0.0001**											
5500		0.0001											
10000		0.00008											
15000		0.00005											
	690		0.00008										
	895		0.00007										
	1410		0.00005										
	1680		0.00004										
	Bulgaria		**0.00002**										
	Ruse		**0.00002**										
	3450		0.00003										
	4950		0.00002										
	10000		-										
	15000		-										

TOC

Table 35 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1380		0.07											
2610		0.05											
3251		0.04											
Bulgaria		**0.03**											
Ruse		**0.03**											
6045		0.02											
10000		0.007											
15000		0.005											
	715		0.008										
	1300		0.005										
	3370		0.003										
	Bulgaria		**0.001**										
	Ruse		**0.001**										
	6390		0.001										
	7500		0.0008										
	10000		0.0005										
	15000		0.0003										

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DIOXINS AND FURANS

Table 36 - 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 (µg/mc x 10)$^{-6}$				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 values[27]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.0008				0,3									< VL
1600				0.0006													< VL
2250				0.0005													< VL
2900				0.0004													< VL
Bulgaria				**0.0003**													< VL
Ruse				**0.0003**													< VL
5600				0.0002													< VL
	1100				0.0002												< VL
	3050				0.0001												< VL
	3300				0.00009												< VL
	Bulgaria				**0.00009**												< VL
	3750				0.00007												< VL
	Ruse				**0.00007**												< VL
	5030				0.00005												< VL
		900				0.00009											< VL
		1050				0.00008											< VL
		1230				0.00007											< VL
		1600				0.00005											< VL
		Bulgaria				**0.00004**											< VL
		3450				0.00003											< VL
		Ruse				**0.00003**											< VL
		5000				0.00002											< VL
			1680				0.00001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[27] there is no worldwide limit value for the concentration of dioxins and furans in immission but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Table 37 - 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						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 year	limit values[28]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.08				0,3									< VL
1600				0.06													< VL
2250				0.05													< VL
2900				0.04													< VL
Bulgaria				**0.03**													< VL
Ruse				**0.03**													< VL
5600				0.02													< VL
	1100				0,.02												< VL
	3050				0.01												< VL
	3300				0.009												< VL
	Bulgaria				**0.009**												< VL
	3750				0.007												< VL
	Ruse				**0.007**												< VL
	5030				0.005												< VL
		900				0.009											< VL
		1050				0.008											< VL
		1230				0.007											< VL
		1600				0.005											< VL
		Bulgaria				**0.004**											< VL
		3450				0.003											< VL
		Ruse				**0.003**											< VL
		5000				0.002											< VL
			1680				0.001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[28] there is no worldwide limit value for the concentration of dioxins and furans in immission but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

4. *It is necessary to ensure a sufficient distance from the border with Bulgaria to limit the impact only to the territory of Romania, given the possible transboundary impact on the international Danube river basin, soils and health of Bulgarian citizens.*

Answer:

As discussed in the chapters of the EIR dealing with the impact of the project on the environmental factor water and the transboundary impact generated by the operation of the project on this environmental factor we have:

DESCRIPTION OF THE MEASURES CONSIDERED FOR THE AVOIDANCE, PREVENTION, REDUCTION OR COMPENSATION OF ANY SIGNIFICANT NEGATIVE EFFECTS ON THE IDENTIFIED ENVIRONMENT" - The wastewater from the analysed site that reaches the industrial sewage network will comply with the provisions of GD 188/2002 modified and completed by GD 325/2005, Annex 3, Table 1 (NTPA 001/2005). After purification, the water is discharged into the industrial sewage network (portion of the network managed by SC Delta Gas SRL) from where it is discharged into the Danube river.

The concentration of pollutants in the wastewater resulting from and discharged from the analysed site is within the maximum values regulated by GD 325/2005, Annex 2, Table 1 (NTPA 01/2005).

The resulting wastewater flow at the site analysed is 2.06 m^3 /day = 0.0858 m^3 /hour = 0.000023 m^3 /s.

As regards the cumulative impact of the wastewater resulting from the site and treated in the treatment plant to be installed (its effluent quality will be within the maximum values regulated by GD 325/2005, Annex 2, Table 1 (NTPA 01/2005) with the impact generated by the operation of the Giurgiu municipality treatment plant, it will be neutral.

The quality of the receiving water (the Danube River), whose multiannual average flow[29] is 6040 m^3 /s, will not be affected by the wastewater resulting from the treatment of the water from the site analysed 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 Giurgiu municipal wastewater treatment plant.

Bearing in mind the following:

- the average annual flow of the Danube River is 6040 m^3 /s
- the flow of wastewater from the analysed site and treated in its own treatment plant is much lower than the wastewater discharge from the Giurgiu municipality treatment plant before discharge into the natural receiver (Danube river), i.e. 0,00012 m^3 /s and is more than insignificant compared to the average annual flow of the river
- the dilution effect of the water discharged into the Danube River is instantaneously analysed by the ratio of the resulting wastewater flow at the analysed site (0.000023 m^3 /s) to the average annual flow of the Danube River (6040 m^3 /s)

there is no question of cross-border impact.

Consequently, there is no question of a "*possible transboundary impact on the international basin of the Danube River, on the soils and health of Bulgarian citizens*" and there is no question of "*It is necessary to ensure a sufficient distance from the border with Bulgaria to limit the impact only to the territory of Romania*".

5. *In the EIA report, the impact of diffuse atmospheric pressure resulting from gases emitted from combustion processes on the Danube must be considered and analysed in detail.*

[29] Flood Risk Management Plan - Danube River

Answer:

As has been shown in all the chapters in which the types and quantities of pollutants emitted into the atmosphere from the incineration process and their concentrations in immission have been analysed, it has been shown that these values are well below the admissible limit values in Romanian and European legislation.

Both the type of pollutants emitted and their quantities and concentrations are not capable of creating an effect such as "*the impact of diffuse atmospheric pressure resulting from gases emitted by combustion processes on the Danube*".

Comments on the "air" component

1. *The documents show emission limit values set according to Directive 2010/75/EU on industrial emissions, emission levels according to Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions for waste incineration, as well as maximum expected emissions from the incinerator (values from the incinerator technical book and literature are used), with and without supplementary air supply. It is not clear which emission limit values will be respected by the operator when operating the plant. Also, in order to take into account the most significant allowable contribution of the plant to ambient air quality, the mathematical modelling should be carried out using a mass flow rate calculated on the basis of the emission limit values for the plant and the maximum allowable flow rate. This will ensure that, at these even lower emission levels, emissions will not lead to exceedances of the standards set for the protection of human health.*

a. *It is not clear which emission limit values will be observed by the operator when operating the installation.*

Answer

The emission limit values imposed by Romanian legislation transposing European directives will be observed.

b. *Also, in order to take into account the most significant allowable contribution of the installation to ambient air quality, the mathematical modelling should be carried out using a mass flow rate calculated on the basis of the emission limit values for the installation and the maximum allowable flow rate. This will ensure that, at these even lower emission levels, emissions will not lead to exceedances of the standards set for the protection of human health.*

Answer

The pollutant mass flow rates used as input data in the mathematical modelling of the dispersion of air pollutants to determine their concentrations in the atmosphere are not calculated on the basis of emission limit values but on the basis of emission factors for each type of pollutant (according to the legal regulations in force).

These elements have been explained, determined by very clear and transparent calculations in the RIM chapters.

Calculations were carried out for both the implementation phase and the operational phase of the project.

Thus, we have:

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In chapter "5. DESCRIPTION OF RELEVANT ENVIRONMENTAL FACTORS SUSPECTABLE TO BE AFFECTED BY THE PROJECT" - subchapter "5.5. AIR AND CLIMATE"

Sources and pollutants generated during the realisation of the objective

At this stage there will only be mobile sources of pollution, not stationary sources.

The sources of air pollution during the incinerator and mobile construction works are the machinery and means of transport carrying out thc works:

- transport of components of mobile buildings
- transport of incinerator components
- loading - unloading of the components of the mobile buildings and the incinerator
- construction of anchoring foundations (blocks of blocks)
- incinerator assembly
- assembly of mobile constructions

The machinery and means of transport to be used are:

- crane
- means of heavy goods vehicle transport
- means of light goods vehicle transport

All of them are equipped with diesel engines. The characteristic pollutants are:

- sulphur dioxide
- carbon monoxide
- nitrogen oxides
- persistent organic pollutants (POPs)
- heavy metal compounds (especially cadmium) in exhaust gases

Concentrations and mass flow rates of discharged pollutants

The type and volumes of works to be carried out during the whole period of the incinerator and mobile construction are:

- crane handling of mobile construction components and incinerator components (approx. 40 hours crane operation)
- transport of materials for the construction of anchoring foundations and transport of mobile construction components and incinerator components. Approx. 300 t of materials with a number of approx. 30 trips

The mass flows of pollutants to be discharged with the exhaust gases by the machinery and means of transport used were calculated according to the Methodology for calculating the contributions and taxes due to the Environment Fund, approved by Ministerial Order no. 578/2006, depending on:

- type and capacity of the machine
- the type of fuel used and its sulphur content
- fuel consumption per machine/vehicle
- working regime
- operating conditions

The fuel used shall be diesel fuel with a maximum sulphur content of 0.2 %.

The calculation formula is:

$E_i = FE_i \times N_i \times CC_i$

where: E_i = pollutant mass flow rate

FE_i = emission factor corresponding to the pollutant and the category of the machine/vehicle

N_i = number of vehicles in the category

CC_i = specific diesel consumption for the category of machine/vehicle (this must be converted into kg depending on the density of the fuel used - for diesel d = 820 -845 kg/mc (density at 15 degrees C.)

SO_2 emission calculation₂ :

$ESO_2 = K_s \times C$ (in kg)

Where:

E SO_2 - emission of SO_2

Ks - S content of fuel, expressed in relative mass (kg/kg); for diesel used $K_S = 0.002$

C - fuel consumption (kg).

Emission factors for heavy-duty diesel vehicles (> 3,5 t) - diesel fuel

Table 38 - Diesel emission factors

	NO_X	CH_4	VOC	CO	NO_2	CO_2
Moderate control, fuel consumption of 30.8 l/100 km						
total g/km	10.9	0.06	2.08	8.71	0,.3	800
g/kg fuel	42.7	0.25	8.16	,34,	0.12	3138
g/MJ	1.01	0.00	0.19	0.80	0.003	73.9

For all the activities to be carried out, diesel consumption is estimated at approx. 700 l, a total number of operating hours of machinery and vehicles of approx. 50, an average hourly consumption of 15.4 l/h/vehicle and a number of 4 such machines (1 crane and 3 means of transport). In this case we will have:

A. Hourly average mass flow rates of pollutants from all sources assuming simultaneous operation:

Average hourly consumption = 4 machines x 15.4 l/h/machine = 91.6 l/h = 76.03 kg/h (d = 0.830 kg/l)

Table 39 - Pollutant mass flow rates (g/h)

	Mass flow (g/h)						
	NO_X	CH_4	VOC	CO	NO_2	CO_2	SO_2
FE g/kg fuel	42.7	0.25	8.16	34.2	0.12	3138	2
total emissions all sources	3246	19	620	2600	9	238583	152.06

It has been taken into account that not all machinery and vehicles involved in the construction and transport of materials and components are in operation at the same time.

B. Total emissions for the entire incinerator and metal hall placing activity:

Estimated total diesel consumption = 700 l = 581 kg (d = 0.830 kg/l).

Table 40 - Pollutant mass flow rates (kg)

	Mass flow (kg)						
	NO_X	CH_4	VOC	CO	NO_2	CO_2	SO_2
FE g/kg fuel	42.7	0.25	8.16	34.2	0.12	3138	2
total emissions all sources	24.80	0.14	4.74	19.87	0.07	1823.18	1.162

Bearing in mind the following:

- in reality the mass flow rates of these pollutants are much lower because the machines will never all work simultaneously
- pollutants released in exhaust fumes are released freely into the atmosphere
- dispersion conditions at the site under consideration are very good

- the quantities of dust released during the works and transport are very low, as the site will be worked on only concrete platforms and vehicles will be driven only on asphalt or concrete roads

it is estimated that the pollution generated for the environmental factor air at this stage will be insignificant and will not cause discomfort

Sources and pollutants generated during operation of the objective

Activities that will generate sources of air pollution are those related to:

- combustion of fuel (LPG) in the incinerator
- on-site traffic (vehicles entering and leaving the site carrying waste for disposal on site, removal of ash and waste from the site, internal transport)

The characteristic pollutants are:

- sulphur dioxide
- carbon monoxide
- nitrogen oxides
- persistent organic pollutants (POPs)
- heavy metal compounds (especially cadmium) in exhaust gases

Concentrations and mass flow rates of pollutants discharged into the atmosphere

For stationary directed sources

According to the specifications in the technical books of incinerators equipped with LPG burners, compared with the average values according to European standards, for pollutants emitted into the atmosphere we have the values:

Table 41 - Average emissions and EU Standards of basic incinerators (with secondary compartment)

Parameter	Standard values	Measured values at incinerators
Solid particle	30 mg/m³	1.2 mg/m³
Sulphur dioxide	200 mg/m³	2.4 mg/m³
Nitrogen Dioxide*	400 mg/m³	60 mg/m³
Carbon Monoxide	100 mg/m³	78.3 mg/m³

Normally at incinerators equipped with:

- secondary combustion chamber for the flue gases from the primary chamber
- dry absorbing system,
- bag filtration system

stack emission values for these parameters are much lower.

For these reasons, the mathematical modelling of the dispersion of pollutants into the atmosphere resulting from the operation of the incinerator at full capacity will be done with the values in the technical book (those in Table 15).

Burning fuel (LPG) in the incinerator

Centralised data for pollutants emitted from stationary sources are given in the tables below for an hourly consumption of 122.5 l/incinerator = 122.5 l LPG/h:

Table 42 - LPG emission factors

pollutant emitted	NO_X	PM_{10}	CO
FE mg/mc gas	0.001504	0.0001216	0.00064
FE mg/kg LPG	0.00036	0.000029	0.00015
FE mg/l LPG	0.00065	0.000053	0.00028

Table 43 - Emissions from stationary sources of pollution

Source name	Pollutant	Mass flow (mg/h)	Gas/air flow rate (m^3/h)	Emission concentration (mg/m^3)[30]	Alert threshold (mg/m^3)	VLA[31] (mg/m^3)
incinerator exhaust stack	NO_x	0.08	5000	0.00005	245	350
	SO_2	-		-	24,5	35
	CO	0.006		0.000004	70	100
	PM_{10}	0.034		0.00002	3,5	5
	VOC	-			n.n.	n.n.

Burning fuel (LPG) and waste in the incinerator

For burning waste in the incinerator, the required hourly fuel consumption was set at 122.5 l LPG/h for an incinerated waste quantity of 300 kg/h.

The emission values given in the technical book for the analysed incinerator are those in Table 15, respectively:

- Solid particle = 1.2 mg/m³
- Sulphur dioxide = 2.4 mg/m³
- Nitrogen Dioxide = 60 mg/m³
- Carbon Monoxide = 78.3 mg/m³
- HCl = 5.38 mg/m³
- HF = 0.04 mg/m³
- TOC = 4.6 mg/m³

These values are valid for an air flow required to burn the fuel used in the incinerator, respectively: 122.5 x 25 x 0.77 = 2415.88 m³

Taking into account that the IE 1000R-300 incinerator is equipped with an additional injection system (turbine) whose operation is controlled by an automated and computerised temperature and combustion control system and that the injectors are also equipped with turbo blowers which ensure an increased air flow necessary for complete combustion, which are also controlled automatically, an air surplus of between 2000 and 3000 Nm³ /h is ensured. In this case the average hourly exhaust gas flow will be 5000 Nm³ /h in which case the concentrations of pollutants in the emissions resulting from waste incineration will be corrected by a coefficient of 0.48 (2415.88 m³ : 5000 m³ = 0.48).

Consequently, the concentrations of these pollutants at the outlet of the incinerator stack will be:

- solid particles = 1.2 x 0.48 = 0.579 mg/m ³
- sulphur dioxide = 2.4 x 0.48 = 1.152 mg/m³
- nitrogen dioxide = 60 x 0.48 = 28.8 mg/m³
- carbon monoxide = 78.3 x 0.48 = 37.584 mg/m³
- HCl = 5.38 x 0.48 = 2.58 mg/m³
- HF = 0.04 x 0.48 = 0.019 mg/m³
- TOC = 4.6 x 0.48 = 2.208 mg/m³

[30] the worst-case situation is considered when no additional air is added (by forced injection) to the fuel combustion process

[31] Reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11 %.

Table 44 - Mass flow rates and concentrations of pollutants emitted to the atmosphere in load operation without additional air supply

Source name	Pollutant	Mass flow (g/h)	Gas/air flow rate (m^3 /h)	Emission concentration (mg/m)3[32]	VLE[33] (mg/m)^3	Outlet point
LPG combustion + waste	NO_x	144	2416	60	200	incinerator exhaust stack
	SO_2	5.75		2.4	50	
	CO	187.9		78.3	-	
	TSP	2.9		1,2	5	
	VOC	0		0	n.n.	
	HCl	13		5.38	10	
	HF	0.097		0.04	1	
	TOC	11,11		4.6	10	
	PCDD and PCDF	101.47[34]		0.042[35]	0.1[36]	

Table 45 - Mass flow rates and concentrations of pollutants emitted to the atmosphere during load operation with supplementary air supply

Source name	**Pollutant**	**Mass flow (g/h)**	**Gas/air flow rate (m^3 /h)**	**Emission concentration (mg/m)3[37]**	**VLE[38] (mg/m)^3**	**Outlet point**
LPG combustion + waste	NO_x	144	5000	28.8	200	incinerator exhaust stack
	SO_2	5.75		1.15	50	
	CO	187.9		37,58	-	
	PST	2.9		0.58	5	
	VOC	0		0	n.n.	
	HCl	13		2.6	10	
	HF	0.097		0.019	1	
	TOC	11,11		2.22	10	
	PCDD and PCDF	101.47[39]		0.0035[40]	-	

[32] the worst-case situation is considered when no additional air is added (by forced injection) to the fuel combustion process
[33] Daily average limit values cf Annex 6, L 278/2013, reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11%.
[34] expressed in ng I.TEQ/Nmc
[35] ibidem
[36] ibidem
[37] the situation when additional air is added (by forced injection) to the fuel combustion process is considered
[38] Daily average limit values cf Annex 6, L 278/2013, reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11 %.
[39] expressed in ng I.TEQ/Nmc
[40] ibidem

The additional air supply does not affect the amount of pollutant emitted into the atmosphere per unit time but only its concentration at the incinerator stack outlet. This will not affect the calculated values of the pollutant concentrations in the immission determined by mathematical modelling, because the modelling is based on the amounts of pollutants emitted per unit time, regardless of their concentration in the emission.

Table 46 - Pollutants emitted to the atmosphere from incinerator operation

Name of activity	Sources of air pollutants					Physical characteristics of sources			Exhaust gas parameters		
	Name	LPG consumption l/h	Annual working time hours[41]	Pollutants generated	Quantities of pollutants generated kg/year[42]	Name	Height m	Inside diameter (area) at the top of the basket m^2	Speed m/s	temperature °C	Volume flow m^3/s mass flow mg/s
Waste incineration	Incinerator IE 1000R-300	122.5	10 h/day x 320 days/year = 3200 h/year	NO_x	0.614	Flue gas exhaust	10	0.5 m 0.196	7.09	1900	• 1.38 • 0.00002
				SO_2	-						• -
				CO	0.046						• 1.38 • 0.0000017
				PM_{10}	0.261						• 1.38 • 0.000009
				VOC	-						• -

[41] Normally in the incinerator, combustion is initiated when the waste is fed into the incinerator and then the combustion is maintained by the heat input (self-sustaining combustion) from the incinerated waste. For this reason, it has been calculated that, in practice, the LPG supply to the burners for the operation of the incinerator takes on average 10 hours/day.

[42] the calculation is made for 24 h/day operation (worst case where we have maximum emissions to air), without taking into account the phenomenon of self-combustion of waste

Table 47 - pollutants emitted to the atmosphere from the operation of the incinerator with a waste burning rate of 300 kg/h

Name of activity	Sources of air pollutants						Physical characteristics of sources			Exhaust gas parameters		
	Source name	Amount of waste incinerated kg/h	LPG consumption l/h	Annual working time hours[43]	Pollutants generated	Quantities of pollutants generated kg/year[44]	Name of outlet point	Height m	Inside diameter and area at the top of the basket m/m^2	Speed m/s	temperature °C	Volume flow m^3/s mass flow mg/s
Waste incineration	Incinerator IE 1000R-300	300	122.5	**GPL: 10 h/day x 320 days/year = 3200 h/year waste: 24 x 320 = 7680 h/year**	NO_x	1105.92	Flue gas exhaust	10	0.5 m 0.785 m^2	1.769	190	• 1.38 • 40
					SO_2	44.16						• 1.38 • 1,6
					CO	1443.07						• 1.38 • 52.19
					PST	22.27						• 1.38 • 0.8
					VOC	-						• 1.38
					HCl	99.58						• 1.38 • 3.61
					HF	0.74						• 1.38 • 0.0269
					TOC	8.,10						• 1.38 • 3.086
					PCDD and PCDF	0.000768						• 1.38 • 0.0000278

[43] **Normally in the incinerator, combustion is initiated when the waste is fed into the incinerator and then the combustion is maintained by the heat input (self-sustaining combustion) from the incinerated waste. For this reason, it has been calculated that, in practice, for the operation of the incinerator, the LPG supply to the burners is carried out on average 10 hours/day.**

[44] **the calculation is made for 24 h/day operation (worst case where we have maximum emissions to air), without taking into account the phenomenon of self-combustion of waste**

For mobile sources

The unit under analysis will use 4 diesel-powered trucks with a capacity of less than 3.5 t, with an average consumption of 11.5/100 km or 8 l/hour.

According to the specific activities to be carried out on the site under consideration, the most demanding situation concerning the simultaneous operation of the engines of the trucks and the forklift truck involves:

- a maximum of 2 trucks present on the site with engines running simultaneously
- their simultaneous operation for a maximum of 2 hours/day
- a maximum hourly consumption (combustion in the thermal engines of the trucks) of diesel fuel per site of 16 l
- operation of the fork-lift truck for a maximum of 1 hour overlapping with the operation of the truck engines, at an hourly consumption of 6 l diesel fuel
- a maximum hourly consumption (combustion in the thermal engines of the trucks + forklift engine) of diesel fuel per site of 16 + 6 = 22 l/h

The mass flows of pollutants to be discharged with the exhaust gases by the machinery and means of transport used were calculated according to the Methodology for calculating the contributions and taxes due to the Environment Fund, approved by Ministerial Order no. 578/2006, depending on:

- type and capacity of the machine
- the type of fuel used and its sulphur content
- fuel consumption per machine/vehicle
- working regime
- operating conditions

The fuel used shall be diesel fuel with a maximum sulphur content of 0,2 %.

The calculation formula is:

$E_i = FE_i \times N_i \times CC_i$

where: E_i = pollutant mass flow rate

FE_i = emission factor corresponding to the pollutant and the category of the machine/vehicle

N_i = number of vehicles in the category

CC_i = specific diesel consumption for the machine/vehicle category (this must be converted into kg depending on the density of the fuel used - for diesel d = 820 -845 kg/mc (density at 15 degrees C.)

SO_2 emission calculation₂ :

$ESO_2 = K_s \times C$ (in kg)

Where:

E SO_2 - emission of SO_2

Ks - S content of fuel, expressed in relative mass (kg/kg); for diesel used K_S = 0,002

C - fuel consumption (kg)

Emission factors are used to determine the quantities of pollutants emitted into the atmosphere:

Table 48 - Emission factors

	Mass flow (g/h)						
	NO_X	CH_4	VOC	CO	N_2O	CO_2	SO_2
FE g/km	1.44	0.005	0.42	1.58	0.017	284	-
FE g/kg fuel	15.9	0.055	4.64	17.5	0.188	3138	-

Table 49 - Mobile emission sources

Source	Pollutant	NO_X	CH_4	VOC	CO	NO_2	CO_2	SO_2
	FE g/kg fuel	15.9	0.055	4.64	1.58	0.188	3138	2
	hourly diesel consumption l/h - kg/h	**Mass flow (g/h)**						
special car	16 – 13.6	216.24	0.74	63.1	21.48	2.55	42676,8	27.2
forklift	6 – 5.1	81.09	0.28	23.66	8.05	0.95	16003	10.2
Total	22 – 18.7	297.33	1.02	86.76	29.53	3.5	58679.8	37.4

2. *In this case, the estimated concentrations of pollutants emitted to the atmosphere during the operation of an installation were used, which is a prerequisite for a possible underestimation of the air quality impact of the installation in cases where it operates at a higher quantity but within the regulated emission levels.*

Answer:
Estimated values were not used, but the values given in the technical book given by the manufacturer (who has approved the equipment according to European and national standards). In addition to these values, an analysis was also made for the average emissions values of incinerators at European level:

Table 50 - Average emissions and EU Standards of basic incinerators (with secondary compartment)

Parameter	Standard values	Measured values at incinerators
Solid particle	30 mg/m³	1.2 mg/m³
Sulphur dioxide	200 mg/m³	2.4 mg/m³
Nitrogen Dioxide*	400 mg/m³	60 mg/m³
Carbon Monoxide	100 mg/m³	78.3 mg/m³

3. *On page 205 of the report, it is stated that "the provisions of best available practices (BAT) will apply during the permitting and operation phase of the plant", whereby we can assume that the operator will comply with all the requirements set out in Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing BAT conclusions for the incineration of waste as well as those set out in Directive 2010/75/EU. In this regard, we draw attention to the need to set conditions in the forthcoming EIA decision for the operation of the incinerator to ensure that emission limit values and emission monitoring requirements are met, in full compliance with the European legislation for waste incineration plants - Directive 2010/75/EU on industrial emissions, Section IV. In relation to the site where the incinerator is proposed to be built, serious attention is drawn to the following issue: it is necessary to prevent/reduce fugitive emissions resulting from the operation of the plant and its associated activities, in order to prevent emissions of harmful substances from reaching the city of Ruse, given the prevailing wind direction, i.e. north/north-east (23.4% of the year) and the distance to the city of Ruse (less than 4 km). In case of any shortcomings in the permitting procedure, construction and operation of the*

plant, the problems would be difficult to solve as the plant is located in a neighbouring country. This also applies to emissions of strong-smelling substances from non-hazardous, medical (non-hazardous and hazardous) and animal waste disposal processes. All possible BAT should be applied and specific requirements should be laid down in the future EIA Decision to prevent off-site releases of strong-smelling substances such as:

- *the storage of animal by-products and other perishable waste which could be a source of odour-causing substances in cold stores for not more than 24 hours*
- *Preparation of an Odor Nuisance Management Plan that includes the components described as BAT on page 249 of the report.*

Answer:

Taking into account the fact that in the whole national system of environmental protection (Ministry of Environment, Water and Forests; National Agency for Environmental Protection as well as in the county agencies for environmental protection) only highly trained and experienced people work, there can be no question of "*deficiencies in the authorisations procedure*".

With regard to RIM, the possible problems that may arise in relation to odour generation have been analysed and the equipment to be used and the recommended measures (including protection against the generation of a transboundary impact) have been described;

Chapter "2. PROJECT DESCRIPTION"

□purchase and the location in the technological flow of 2 cold rooms with V = 16 m^3 each

Sub-chapter "2.3. MAIN FEATURES OF THE OPERATIONAL STAGE OF THE PROJECT"

Cold rooms

Two cold rooms will be set up for the temporary storage of animal and medical waste. They will have the following characteristics:

- **useful volume = 16 cubic metres**
- **dimensions 3 x 2,6 x 2 m**
- **working temperatures 4 ÷ 6 C°**

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

1. 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.

Technology flow for medical waste incineration

- Waste storage - for the situation where medical waste does not go directly into the incineration stream it is temporarily stored in cold room no. 2. Temporary storage is carried out for a maximum of 24 - 48 hours until the incinerator is released.

Chapter "6. DESCRIPTION OF THE SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROJECT":

"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 acceptance, 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. where animal waste is to be handled, the rules on its transport from the generator to the incinerator site must be strictly observed, and a cold room must be used for its temporary storage until it is incinerated - in which case no odours will be generated which would have a significant negative impact on the population".

- *the preparation of an Odour Management Plan that includes the components described as BAT on page 249 of the report*

Answer:

In view of the definition/significance of **the Odour Management Plan**, provided for in Art. 2, para. 49^1 of GEO no. 195/2005 on environmental protection, as subsequently amended and supplemented, i.e., "*a plan of measures comprising the stages to be carried out within specified time intervals in order to identify, prevent and reduce odour nuisance, both* ***in the case of new installations/activities*** *or existing installations/activities and in the case of substantial modifications to existing installations/activities*", in conjunction with the provisions of Art. 12, para. 5^1 of the same legislative act, according to which '*the odour nuisance management plan shall be drawn up by economic operators/owners of activities which may generate odour nuisance*', it is clear that, in accordance with the legal provisions, the odour nuisance management plan is drawn up at the start of the activity, in the procedure for issuing the environmental permit/integrated environmental permit, and not at the design stage, in the procedure for issuing the environmental permit.

At the stage of obtaining the environmental permit, the "Odour Management Plan including the components described as BAT on page 249 of the report" will be drawn up as a mandatory document in the permit file and will be attached to the environmental permit.

Comments on the waste component

1. *In "Environmental Impact Report, Overview 1", paragraph 2.4.6 "Table 13 - Waste Generated During Operation" and in "Appropriate Assessment Study, Rev.1", item 2.6.2 - Project Generated Waste, Table 26, there is no description by code and quantity of the waste that will be generated by the used filters (bag filter as specified in "Exhaust Gas Purification/Washing System, Dry Type" in the Report, page 29) and entrained/entrained ash (dust from the filter system) as well as the recipient and location where it will be delivered.*

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Answer:

Waste name	Estimated quantity to be generated t/year	Waste code*	Source of generation	Storage/storage method	Proposed waste disposal / recovery
Paper - cardboard packaging	0.5	15 01 01	collective packaging resulting from the unpackaging of by-products collected from generators	Plastic bin	It is recovered by authorised economic agents
Plastic packaging	0.5	15 01 02	collective packaging resulting from the unpackaging of by-products collected from generators	Plastic bin	It is recovered by authorised economic agents
Wooden packaging	0.1	15 01 03	collective packaging resulting from the unpacking of by-products collected from shops	Concrete platform	It is recovered by authorised economic agents
Metal packaging	0.2	15 01 04	collective packaging resulting from the unpacking of by-products collected from shops	Metal container	It is recovered by authorised economic agents
Absorbents contaminated with hazardous substances	0.01	15 02 02*	cases of accidental pollution	Metal container	Disposal by authorised economic operators
Filter bags	0.07	15 02 03	bag filtration system	Metal container	Disposal by authorised economic operators
Ferrous materials from combustion ashes	0.1	19 01 02	incineration of medical waste containing metals	Metal container	It is recovered by authorised economic agents
Ash	1.5	19 01 11* bottom ash and slag containing dangerous substances	incinerator	**Containers with a capacity of 1100 l**	**Disposal by authorised economic operators**
Ash	37.5	19 01 12 flue-gas dust and slag other	incinerator	Containers with a capacity of 1100 l	Disposal by authorised economic operators to the

		than those mentioned in 19 01 11*			authorised non-hazardous waste landfill serving the area
Ash	0.5	19 01 12 flue-gas dust and slag other than those mentioned in 19 01 11*	bag filtration system	Containers with a capacity of 1100 l	Disposal by authorised economic operators to the authorised non-hazardous waste landfill serving the area
grease and oil mixture from oil/water separation other than those mentioned in 19 08 09	0.1	19 08 10*	cleaning the hydrocarbon separator	will be collected in sealed containers by the company that will clean the separator	Disposal by authorised economic operators
sludge from the sewage treatment plant	0.5	19 08 12	operation of the treatment plant	metal container	Disposal by authorised economic operators
Household waste	12 m3/year	20 03 01	Administrative, staff activity	Eurobins placed on the platform	It is eliminated by economic agents authorized by Giurgiu Local Council

2. *The modelling of ambient air emissions presented does not take into account the fact that the Facility will operate with a variety of incinerated waste origins and composition, which is likely to significantly affect the qualitative composition of emissions. The diversity of waste to be Incinerated is not clarified until pages 37-39 of the EIA report. It is clear that the incinerator will not only accept medical waste, as the current name of the proposed investment is erroneously stated. In this respect, it is not clear from the report for which type of waste incineration the mathematical modelling of emissions has been prepared.*

Answer:

In the RIM was clearly presented all the waste types for which the incinerator is intended to be used.

Also, in the RIM it was specified that the calculations of the mass flow rates of pollutants discharged into the atmosphere were carried out both for the situation where the incinerator operates "idle" for LPG combustion only and for the situation where the incinerator operates "on load" with the primary combustion chamber loaded to full capacity. All types of

At the same time, it was specified in the MIR in several places that the analysis was carried out for worst-case situations where emission quantities are maximum.

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Table 51 - Mass flow rates and concentrations of pollutants emitted to the atmosphere in load operation without additional air supply

Source name	Pollutant	Mass flow (g/h)	Gas/air flow rate (m^3 /h)	Emission concentration (mg/m^3)[45]	VLE[46] (mg/m^3)	Outlet point
LPG combustion + waste	NO_x	144	2416	60	200	incinerator exhaust stack
	SO_2	5.75		2.4	50	
	CO	187.9		78.3	-	
	PST	2.9		1,2	5	
	VOC	0		0	n.n.	
	HCl	13		5.38	10	
	HF	0.097		0.04	1	
	TOC	11.11		4.6	10	

Table 52 - Mass flow rates and concentrations of pollutants emitted to the atmosphere during load operation with supplementary air supply

Source name	**Pollutant**	**Mass flow (g/h)**	**Gas/air flow rate (m^3 /h)**	**Emission concentration (mg/m^3)[47]**	**VLA[48] (mg/m^3)**	**Outlet point**
LPG combustion + waste	NO_x	144	5000	28.8	200	incinerator exhaust stack
	SO_2	5.75		1.15	50	
	CO	187.9		37,58	-	
	PST	2.9		0.58	5	
	VOC	0		0	n.n.	
	HCl	13		2.6	10	
	HF	0.097		0.019	1	
	TOC	11.11		2.22	10	

Table 53 - Pollutant mass flow rates - stationary directed pollution sources

Source name	Pollutant	Mass flow (mg/h)	Gas/air flow rate (m^3 /h)	Emission concentration (mg/m^3)[49]	Alert threshold (mg/m^3)	VLA[50] (mg/m^3)
incinerator exhaust stack	NOx	0.08	5000	0.00005	245	350
	SO2	-		-	24.5	35
	CO	0.006		0.000004	70	100
	PM10	0.034		0.00002	3..5	5
	VOC	-			n.n.	n.n.

[45] the worst-case situation is considered when no additional air is added (by forced injection) to the fuel combustion process
[46] Daily average limit values cf Annex 6, L 278/2013, reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11%.
[47] the situation when additional air is added (by forced injection) to the fuel combustion process is considered
[48] Daily average limit values cf Annex 6, L 278/2013, reference conditions T = 273° K, P = 101,3 kPa, dry gas, oxygen content 11%.
49 the worst-case situation is considered when no additional air is added (by forced injection) to the fuel combustion process
50 Reference conditions T = 273 oK, P = 101,3 kPa, dry gas, oxygen content 11 %.

Comments on the impact on people and possible health risk of implementing the investment proposal:

1. *The proposed project has a potentially significant negative effect in a transboundary context and is not an investment that minimises negative impacts on human health, given that the city of Ruse has been a hotspot for decades in terms of poor air quality and health and demographic indicators in Ruse are less favourable than the national average, including mortality from respiratory and cardiovascular diseases and malignant neoplasms. According to the information presented, it can be concluded that there is potential for the incinerator activities to directly or indirectly affect public health.*

Answer

- *The proposed project has a potentially significant adverse effect in a cross-border context and is not an investment that minimises adverse impacts on human health*

As shown in the RIM chapters the impact of the incinerator operation on the air environmental factor and implicitly on the air quality is neutral both at the border with the Republic of Bulgaria and even more so at the border of Ruse:

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Centralisation of data obtained from mathematical modelling of pollutant dispersion in the atmosphere:

CARBON MONOXIDE (CO)

Table 54 - Variation of CO concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Ecosystem			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)						
8 h	24 h	1 year	8 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
900			0.4						10000	7000	5000				< VL
2900			0.2												< VL
Bulgaria[51]			**0.1**												< VL
Ruse[52]			**0.1**												
4000			0.1												< VL
5300			0.08												< VL
6700			0.06												< VL
10000			0.02												< VL
15000			0.008												< VL
	1380			0.1											< VL
	1660			0.08											< VL
	3340			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			**0.03**											
	5080			0.03											< VL
	10000			0.01											< VL
	15000			0.05											< VL
		760			0.02										< VL
		1290			0.01										< VL
		1500			0.006										< VL
		1900			0.004										< VL
		Bulgaria			**0.001**										< VL
		Ruse			**0.001**										
		5000			0.001										< VL
		10000			-										< VL
		15000			-										< VL

[51] at the border with Bulgaria at a distance of 3317 m

[52] at the border of the residential area of Ruse at a distance of 3856 m

NO_x

Table 55 - Variation of NOx concentration in relation to distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Annual value (µg/mc)						
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
400			1			200	140	100	40	32	26	30	24	19,5	< VL
1900			0.8												< VL
3390			0.5												< VL
Bulgaria			**0.4**												< VL
Ruse			**0.4**												
5330			0.3												< VL
355			5												< VL
10000			0.1												< VL
15000			0.05												< VL
	890			0/1											< VL
	1450			0/08											< VL
	2800			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			**0.03**											
	3680			0.03											< VL
	8000			0.01											< VL
	10000			0.005											< VL
	15000			0.003											< VL
		960			0.01										< VL
		1400			0.007										< VL
		1700			0.005										< VL
		2200			0.003										< VL
		Bulgaria			**0.001**										< VL
		Ruse			**0.001**										
		3880			0.001										< VL
		7900			0.00032										< VL
		10000			-										< VL
		15000			-										< VL

SO_x

Table 56 - Variation of SO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			Annual value (µg/mc)			
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
540			0.04			350			125	75	50	20	12	8	< VL
3280			0.02												< VL
Bulgaria			**0.02**												< VL
Ruse			**0.02**												
6160			0.01												< VL
7500			0.008												< VL
10000			0.006												< VL
15000			0.002												< VL
	350			0.005											< VL
	1440			0.003											< VL
	Bulgaria			**0.001**											< VL
	Ruse			**0.001**											
	3840			0.001											< VL
	6880			0.0005											< VL
	10000			0.0003											< VL
	15000			0.00009											< VL
		800			0.001										< VL
		960			0.0008										< VL
		1200			0.0005										< VL
		1570			0.0003										< VL
		2150			0.0001										< VL
		Bulgaria			**0.00005**										< VL
		Ruse			**0.00005**										
		3680			0.00005										< VL
		8000			0.000013										< VL
		10000			-										< VL
		15000			-										< VL

TSP

Table 57 - Variation of TSP concentration in relation to distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (µg/mc)				Human health						Ecosystem			Obs.
								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 values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
605				0.02				50	35	25	40	28	20				< VL
3360				0.01													< VL
Bulgaria				**0.01**													< VL
Ruse				**0.01**													
5390				0.006													< VL
6230				0.005													< VL
10000				0.002													< VL
15000				0.001													< VL
		875				0.002											< VL
		2730				0.001											< VL
		Bulgaria				**0.0006**											< VL
		Ruse				**0.0006**											
		3770				0.0006											< VL
		4800				0.0005											< VL
		10000				0.0001											< VL
		15000				0.00005											< VL
			980				0.0004										< VL
			1640				0.0001										< VL
			2680				0.00005										< VL
			Bulgaria				**0.00002**										< VL
			Ruse				**0.00002**										
			4260				0.00002										< VL
			10000				0.00001										< VL
			15000				-										< VL

HCl

Table 58 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (μg/mc)		Human health						Vegetation (μg/mc)			Obs.
				Hourly value (μg/mc)			Annual value (μg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
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										

HF

Table 59 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1630		0.0006											
2185		0.0005											
2830		0.0004											
Bulgaria		**0.0001**											
Ruse		**0.0001**											
5500		0.0001											
10000		0.00008											
15000		0.00005											
	690		0.00008										
	895		0.00007										
	1410		0.00005										
	1680		0.00004										
	Bulgaria		**0.00002**										
	Ruse		**0.00002**										
	3450		0.00003										
	4950		0.00002										
	10000		-										
	15000		-										

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TOC

Table 60 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1380		0.07											
2610		0.05											
3251		0.04											
Bulgaria		**0.03**											
Ruse		**0.03**											
6045		0.02											
10000		0.007											
15000		0.005											
	715		0.008										
	1300		0.005										
	3370		0.003										
	Bulgaria		**0.001**										
	Ruse		**0.001**										
	6390		0.001										
	7500		0.0008										
	10000		0.0005										
	15000		0.0003										

DIOXINS AND FURANS

Table 61 - 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 (µg/mc x 10)⁻⁶				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 values[53]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.0008				0,3									< VL
1600				0.0006													< VL
2250				0.0005													< VL
2900				0.0004													< VL
Bulgaria				**0.0003**													< VL
Ruse				**0.0003**													< VL
5600				0.0002													< VL
	1100				0.0002												< VL
	3050				0.0001												< VL
	3300				0.00009												< VL
	Bulgaria				**0.00009**												< VL
	3750				0.00007												< VL
	Ruse				**0.00007**												< VL
	5030				0.00005												< VL
		900				0.00009											< VL
		1050				0.00008											< VL
		1230				0.00007											< VL
		1600				0.00005											< VL
		Bulgaria				**0.00004**											< VL
		3450				0.00003											< VL
		Ruse				**0.00003**											< VL
		5000				0.00002											< VL
			1680				0.00001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[53] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Table 62 - 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						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 year	limit values[54]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.08				0,3									< VL
1600				0.06													< VL
2250				0.05													< VL
2900				0.04													< VL
Bulgaria				**0.03**													< VL
Ruse				**0.03**													< VL
5600				0.02													< VL
	1100				0.02												< VL
	3050				0.01												< VL
	3300				0.009												< VL
	Bulgaria				**0.009**												< VL
	3750				0.007												< VL
	Ruse				**0.007**												< VL
	5030				0.005												< VL
		900				0.009											< VL
		1050				0.008											< VL
		1230				0.007											< VL
		1600				0.005											< VL
		Bulgaria				**0.004**											< VL
		3450				0.003											< VL
		Ruse				**0.003**											< VL
		5000				0.002											< VL
			1680				0.001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[54] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

- *Based on the information presented, it can be concluded that there is potential for the incinerator's activities to directly or indirectly affect public health.*

Answer:

According to the information presented in the RIM and in this document, it is very clear that **THERE IS NO POTENTIAL FOR INCINERATOR ACTIVITIES TO DIRECTLY OR INDIRECTLY AFFECT PUBLIC HEALTH.**

2. *Information on the health risk to the population of Ruse has not been described and substantiated. It is concluded that the possible release of pollutants into the atmosphere will have no direct impact at a distance of 3317 m to the nearest boundary point.*

Answer:

Information on the health risk to the population in the vicinity of the incinerator site (municipality of Giurgiu), other neighbouring municipalities, including the territory of the Republic of Bulgaria and including the inhabitants of the town of Ruse was presented in the conclusions of the RIM.

In addition to these we have the following information:

Centralisation of information

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Centralisation of data obtained from mathematical modelling of pollutant dispersion in the atmosphere:

CARBON MONOXIDE (CO)

Table 63 - Variation of CO concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Ecosystem			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)						
8 h	24 h	1 year	8 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria[55]			**0.1**						10000	7000	5000				<<< VL
Ruse[56]			**0.1**												<<< VL
	Bulgaria			**0.03**											<<< VL
	Ruse			**0/03**											<<< VL
		Bulgaria			**0.001**										<<< VL
		Ruse			**0.001**										<<< VL

NO_2

Table 64 - Variation of NO_2 concentration in relation to distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value[57] (µg/mc)			Annual value (µg/mc)						
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria			**0.4**				200			40					<<< VL
Ruse			**0.4**												<<< VL
	Bulgaria			**0.03**											<<< VL
	Ruse			**0.03**											<<< VL
		Bulgaria			**0.001**										<<< VL
		Ruse			**0.001**										<<< VL

[55] at the border with Bulgaria at a distance of 3317 m

[56] at the border of the residential area of Ruse at a distance of 3856 m

[57] European Environment Agency - Nitrogen dioxide - Annual limit values for the protection of human health

SO_x

Table 65 - Variation of SO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			Annual value (µg/mc)			
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria			**0.02**			350			125	75	50	20	12	8	< VL
Ruse			**0.02**												
	Bulgaria			**0.001**											< VL
	Ruse			**0.001**											
		Bulgaria			**0.00005**										< VL
		Ruse			**0.00005**										

TSP

Table 66 - Variation of TSP concentration in relation to distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (µg/mc)				Human health						Ecosystem			Obs.
								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 values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria				**0.01**				50	35	25	40	28	20				< VL
Ruse				**0.01**													
		Bulgaria				**0.0006**											< VL
		Ruse				**0.0006**											
			Bulgaria				**0.00002**										< VL
			Ruse				**0.00002**										

HCl

Table 67 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (mg/mc)			Annual value (mg/mc)			(µg/mc)			
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria		**0.03**		1490	74,52	52							<<< VL
Ruse		**0.03**											<<< VL
	Bulgaria		**0.003**										<<< VL
	Ruse		**0.003**										<<< VL

According to data from the world scientific literature[58] , the following conclusions have been reached after numerous researches:

EFFECT ON HUMAN

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

[58] 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 68 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria		**0.0001**		36000	20000	800							<<< VL
Ruse		**0.0001**											<<< VL
	Bulgaria		**0.00002**										<<< VL
	Ruse		**0.00002**										<<< VL

According to data from the world scientific literature[59], 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

[59] 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.

HUMAN TOXICITY DATA

2.1.Acute lethality

o 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 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) quote 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 69 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria		**0.03**											
Ruse		**0.03**											
	Bulgaria		**0.001**										
	Ruse		**0.001**										

DIOXINS AND FURANS

Table 70 - 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 (µg/mc x 10)$^{-6}$				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 values[60]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria				**0.0003**				0,3									< VL
Ruse				**0.0003**													< VL
	Bulgaria				**0.00009**												< VL
	Ruse				**0.00007**												< VL
		Bulgaria				**0.00004**											< VL
		Ruse				**0,00003**											< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[60] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Table 71 - 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						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 year	limit values[61]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
Bulgaria				**0.03**				0,3									< VL
Ruse				**0.03**													< VL
	Bulgaria				**0.009**												< VL
	Ruse				**0.007**												< VL
		Bulgaria				**0.004**											< VL
		Ruse				**0.003**											< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

The centralisation of the above information is presented in tabular form:

Table 72: concentration values in immission at Ruse city boundary

Pollutant	**mediation period (µg/mc)**			**lower threshold (µg/mc)**			**upper threshold (µg/mc)**			**limit values (µg/mc)**		
	1 h	8 h	24 h	1 h	8 h	24 h	1 h	8 h	24 h	1 h	8 h	24 h
CO			0.03			5000						
NO_2	0.4											
SO_x	0.02		0.001			50	200			350		
TSP	0,1		0.0006	25		20						
HCl	0.03			52×10^3								
HF	0.0001			800								
dioxins and furans values expressed in (pg I.TEQ/Nmc)	0.007									0.3		

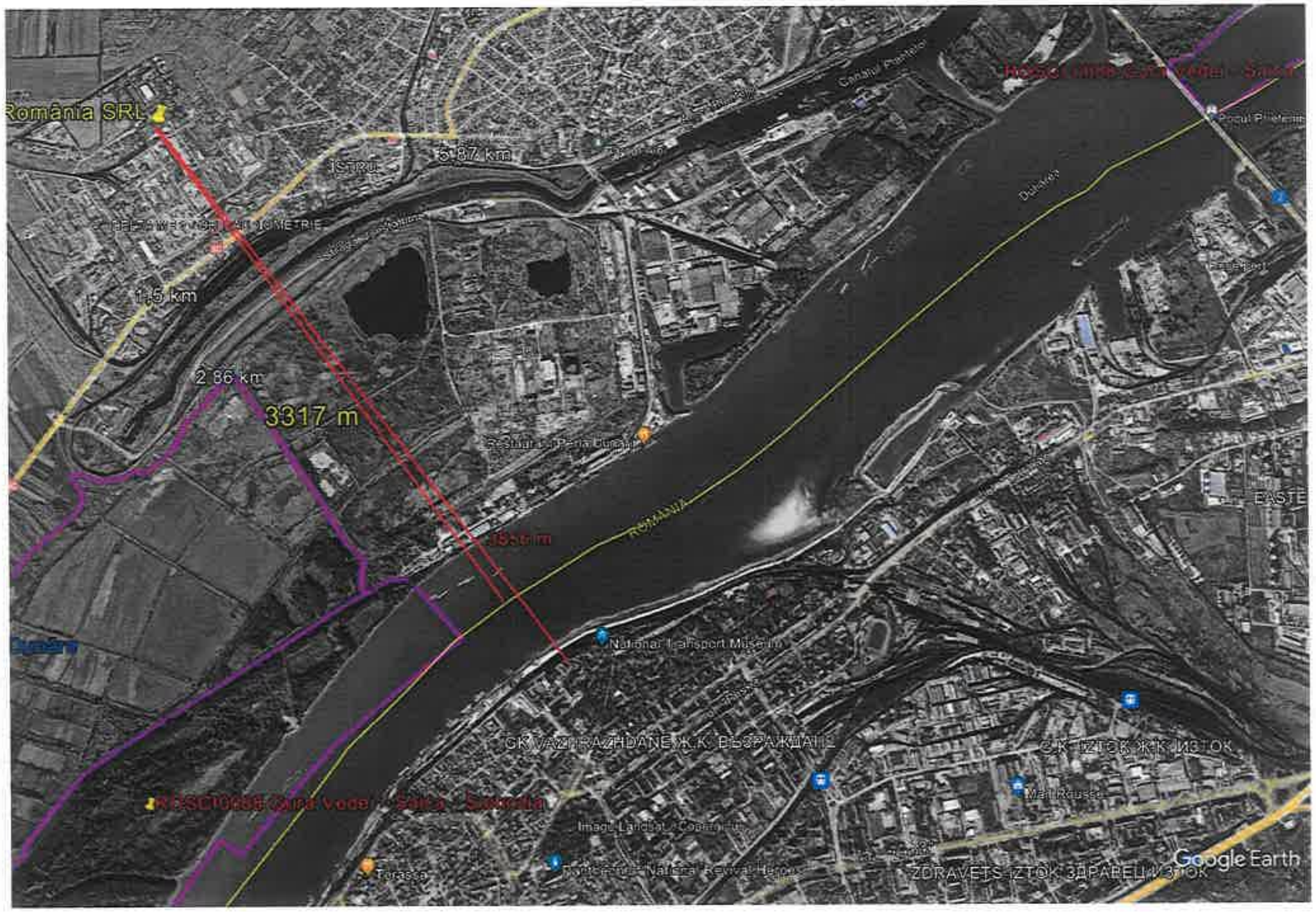
[61] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

The conclusions of the information presented above on the transboundary impact of the 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 Romanian boundary of Ruse are well below the lower threshold values for human health. The impact of the incinerator operation 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. The impact of the incinerator operation 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). The impact of the operation of the incinerator on the health of the inhabitants 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). The impact of the incinerator operation on the health of the inhabitants of Ruse 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. The impact of the incinerator operation on the health of the inhabitants of Ruse 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. The impact of the incinerator operation on the health of the inhabitants of Ruse will be neutral.
7. dioxins and furans - the values recorded for concentration in immission at the Romanian boundary of Ruse are well below the limit values for human health. The impact of the incinerator operation on the health of the inhabitants of Ruse will be neutral.

3. *In order to be able to express an opinion on the level of significance of the impact and risk to human health, it is necessary that the information contains sufficient facts, data and studies and that the analyses, conclusions and inferences drawn from them on the presence and level of health risk for the population of the city of Ruse are substantiated:*
   - *distances to the residential area of Ruse, adjacent to the Danube;*

The distance between the boundary of the incinerator site and the Romanian border of Ruse is 3856 m:



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- *assessment and calculation of the estimated impact of the emitted pollutants on the health of the population of the city of Ruse;*

Answer:
It was done in point 2 (above).

- *indication of the estimated concentrations of pollutants emitted from flue gases in ambient air at the boundary of the residential area of the city and their compliance with the permissible limits for concentrations of hazardous substances in ambient air of human settlements;*

Answer:
It was done in point 2 (above).

- *indication of the estimated area for the spread of flue gases from the exhaust device in the worst-case wind dew location;*

Answer:
The dispersion diagrams for each individual pollutant, through mathematical modelling of the pollutant dispersion, were made for the whole wind speed, implicitly also for situations and periods of the year when the wind blows mainly from Romania to Bulgaria and the dispersion area was determined for a radius of up to 15000 m from the incinerator position.

- *from the cumulative impact analysis performed, to estimate the dispersion of pollutants in the worst-case location of wind speed for the city of Ruse;*

Answer:
The creation of dispersion diagrams, for each pollutant, by mathematical modelling of pollutant dispersion was carried out for the whole wind rose, implicitly also for situations and periods of the year when the wind blows predominantly from Romania to Bulgaria.

- *The information presented in the EIA report does not demonstrate the existence of the necessary facilities for the treatment of waste gases in the event of their organised release into the atmosphere in accordance with BAT requirements.*

Answer:
This statement is totally erroneous because in the chapter "11 BAT" of the RIM all BATs related to waste incineration activity are analysed and it is explained very clearly, for each BAT, how the incinerator and the whole incineration activity on the site will comply with these BATs.

Moreover, in point 2 under the heading **"General comments"** of address no. DGEIPSC/R/22571/13.09.2023 it is stated very clearly and without doubt that:
"A comparative assessment of the proposed activities with the currently available BAT implementation requirements has been carried out. The operator's proposal complies with the BAT criteria in terms of pollutant types, pollutant emission limits and treatment facilities required to comply with BAT"

4. *The holder proposes only to use a bag filter, which, given the types of incinerated waste with high plastic content and potential for furan and dioxin release, is an insufficient technique from a human health perspective;*
   - *The report states that "the exhaust system consists of a centrifuge and a straightening fan. The advantage of this FGD solution is the approximately 98% efficiency of pollutant removal". This technique, as well as the hydrofluoric filter, filters dioxins, nitrogen oxides and sulphur oxides, as these are gases and not solid particles;*

Answer:

Nowhere in the RIM is the wording *"the exhaust system consists of a centrifuge and a straightening fan. The advantage of this FGD solution is the approximately 98% efficiency of pollutant removal"*. Probably, by mistake, those who issued that notification have confused it with another study they reviewed, which probably refers to another project.

In the RIM it is presented that:

1. The incinerator is equipped with a dry flue gas cleaning/scrubbing system consisting of
   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.
2. 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 ($NaHCO_3$ 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 non-polluting substance. 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).
3. The efficiency of the flue gas purification system consisting of the secondary airlock and the flue gas cleaning system of the "dry absorbing system" type ensures a removal of pollutants from the flue gas discharged into the atmosphere of more than 98%, which is sufficient to ensure that the pollutant values in these gases do not exceed the emission limit values.

- *taking into account that the main problem of the proposed project is the absence of treatment facilities required by BAT for the incineration of waste with risk of release of organic pollutants including dioxins and furans (medical waste is incinerated in plastic packaging and the waste itself contains a lot of plastic), we consider that it is necessary to ensure efficient treatment of the outgoing emission stream as BAT equipment referred to in point 30(i) of EC Decision 2019/2010, i.e. by using a wet scrubber with carbon sorbent;*

Answer:

The statement "the *main problem of the proposed project is the absence of treatment facilities required by BAT for the incineration of waste with risk of release of organic pollutants including dioxins and furans*" is erroneous as it was explained in Chapter 11. BAT of the RIM and in the above paragraphs precisely that **the plant in the analysed project complies with BAT conditions.**

Moreover, in point 2 under the heading **"General comments"** of notification no. DGEIPSC/R/22571/13.09.2023 it is stated very clearly and without doubt that:

"A comparative assessment of the proposed activities with the BAT implementation requirements currently available has been carried out. The operator's proposal complies with the BAT criteria in terms of pollutant types, pollutant emission limits and treatment facilities required to comply with BAT"

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- *The results presented on page 91 of the Report are incomplete for the emission pollutants: PM, SO2, CO2, NOx, POPS, Cd. According to Directive 2010/75/EU it is necessary to add the totals for organic carbon, hydrogen chloride, hydrogen fluoride, polychlorinated dibenzodioxins and furans, benzpyrene;*

Answer:

The statement is incorrect because in the relevant chapters of the RIM (and in the explanations given above) it has been demonstrated that the analysis has been carried out very seriously, with the results being correct and complete in accordance with the legal provisions in force.

We resume part of this analysis below:

Centralisation of data obtained from mathematical modelling of pollutant dispersion in the atmosphere:

CARBON MONOXIDE (CO)

Table 62 - Variation of CO concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Ecosystem			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)						
8 h	24 h	1 year	8 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
900			0.4						10000	7000	5000				< VL
2900			0.2												< VL
Bulgaria[62]			**0.1**												< VL
Ruse[63]			**0.1**												
4000			0.1												< VL
5300			0.08												< VL
6700			0.06												< VL
10000			0.02												< VL
15000			0.008												< VL
	1380			0.1											< VL
	1660			0.08											< VL
	3340			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			**0.03**											
	5080			0.03											< VL
	10000			0.01											< VL
	15000			0.05											< VL
		760			0.02										< VL
		1290			0.01										< VL
		1500			0.006										< VL
		1900			0.004										< VL
		Bulgaria			**0.001**										< VL
		Ruse			**0.001**										
		5000			0.001										< VL
		10000			-										< VL
		15000			-										< VL

62 at the border with Bulgaria at a distance of 3317 m

63 at the border of the residential area of Ruse at a distance of 3856 m

NO_x

Table 63 - Variation of NOx concentration in relation to distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Annual value (µg/mc)						
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
400			1			200	140	100	40	32	26	30	24	19,5	< VL
1900			0.8												< VL
3390			0.5												< VL
Bulgaria			0.4												< VL
Ruse			**0.4**												
5330			0.3												< VL
355			5												< VL
10000			0.1												< VL
15000			0.05												< VL
	890			0.1											< VL
	1450			0.08											< VL
	2800			0.05											< VL
	Bulgaria			**0.03**											< VL
	Ruse			**0.03**											
	3680			0.03											< VL
	8000			0.01											< VL
	10000			0.005											< VL
	15000			0.003											< VL
		960			0.01										< VL
		1400			0.007										< VL
		1700			0.005										< VL
		2200			0.003										< VL
		Bulgaria			**0.001**										< VL
		Ruse			**0.001**										
		3880			0.001										< VL
		7900			0.00032										< VL
		10000			-										< VL
		15000			-										< VL

SO_x

Table 64 - Variation of SO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			Annual value (µg/mc)			
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
540			0.04			350			125	75	50	20	12	8	< VL
3280			0.02												< VL
Bulgaria			**0.02**												< VL
Ruse			**0.02**												
6160			0.01												< VL
7500			0.008												< VL
10000			0.006												< VL
15000			0.002												< VL
	350			0.005											< VL
	1440			0.003											< VL
	Bulgaria			**0.001**											< VL
	Ruse			**0.001**											
	3840			0.001											< VL
	6880			0.0005											< VL
	10000			0.0003											< VL
	15000			0.00009											< VL
		800			0.001										< VL
		960			0.0008										< VL
		1200			0.0005										< VL
		1570			0.0003										< VL
		2150			0.0001										< VL
		Bulgaria			**0.00005**										< VL
		Ruse			**0.00005**										
		3680			0.00005										< VL
		8000			0.000013										< VL
		10000			-										< VL
		15000			-										< VL

TSP

Table 65 - Variation of TSP concentration with distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (µg/mc)				Human health						Ecosystem			Obs.
								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 values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
605				0.02				50	35	25	40	28	20				< VL
3360				0.01													< VL
Bulgaria				**0.01**													< VL
Ruse				**0.01**													
5390				0.006													< VL
6230				0.005													< VL
10000				0.002													< VL
15000				0.001													< VL
		875				0.002											< VL
		2730				0.001											< VL
		Bulgaria				**0.0006**											< VL
		Ruse				**0.0006**											
		3770				0.0006											< VL
		4800				0.0005											< VL
		10000				0.0001											< VL
		15000				0.00005											< VL
			980				0.0004										< VL
			1640				0.0001										< VL
			2680				0.00005										< VL
			Bulgaria				**0.00002**										< VL
			Ruse				**0.00002**										
			4260				0.00002										< VL
			10000				0.00001										< VL
			15000				-										< VL

HCl

Table 66 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation (µg/mc)			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
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										

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HF

Table 67 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1630		0.0006											
2185		0.0005											
2830		0.0004											
Bulgaria		**0.0001**											
Ruse		**0.0001**											
5500		0.0001											
10000		0.00008											
15000		0.00005											
	690		0.00008										
	895		0.00007										
	1410		0.00005										
	1680		0.00004										
	Bulgaria		**0.00002**										
	Ruse		**0.00002**										
	3450		0.00003										
	4950		0.00002										
	10000		-										
	15000		-										

TOC

Table 68 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1380		0.07											
2610		0.05											
3251		0.04											
Bulgaria		**0.03**											
Ruse		**0.03**											
6045		0.02											
10000		0.007											
15000		0.005											
	715		0.008										
	1300		0.005										
	3370		0.003										
	Bulgaria		**0.001**										
	Ruse		**0.001**										
	6390		0.001										
	7500		0.0008										
	10000		0.0005										
	15000		0.0003										

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DIOXINS AND FURANS

Table 69 - 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 (µg/mc x 10)$^{-6}$				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 values[64]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.0008				0,3									< VL
1600				0.0006													< VL
2250				0.0005													< VL
2900				0.0004													< VL
Bulgaria				**0.0003**													< VL
Ruse				**0.0003**													< VL
5600				0.0002													< VL
	1100				0.0002												< VL
	3050				0.0001												< VL
	3300				0.00009												< VL
	Bulgaria				**0.00009**												< VL
	3750				0.00007												< VL
	Ruse				**0.00007**												< VL
	5030				0.00005												< VL
		900				0.00009											< VL
		1050				0.00008											< VL
		1230				0.00007											< VL
		1600				0.00005											< VL
		Bulgaria				**0.00004**											< VL
		3450				0.00003											< VL
		Ruse				**0.00003**											< VL
		5000				0.00002											< VL
			1680				0.00001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[64] there is no worldwide limit value for the concentration of dioxins and furans in immission but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Table 70 - 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						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 year	limit values[65]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.08				0,3									< VL
1600				0.06													< VL
2250				0.05													< VL
2900				0.04													< VL
Bulgaria				**0.03**													< VL
Ruse				**0.03**													< VL
5600				0.02													< VL
	1100				0.02												< VL
	3050				0.01												< VL
	3300				0.009												< VL
	Bulgaria				**0.009**												< VL
	3750				0.007												< VL
	Ruse				**0.007**												< VL
	5030				0.005												< VL
		900				0.009											< VL
		1050				0.008											< VL
		1230				0.007											< VL
		1600				0.005											< VL
		Bulgaria				**0.004**											< VL
		3450				0.003											< VL
		Ruse				**0.003**											< VL
		5000				0.002											< VL
			1680				0.001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[65] there is no worldwide limit value for the concentration of dioxins and furans in immission but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Conclusions on emissions and immissions

a) Concerning directed emissions:

For the assessment of the level of pollutant emissions resulting from the operation of the combustion plant, theoretical calculations were made for the pollutant emissions depending on the fuel consumption and type of fuel used, calorific value and emission factor.

The calculation was performed for a calorific value of the fuel used of 11070 kcal/kg (45 MJ/kg - the lower calorific value of LPG).

The combustion source is the burners of the combustion and afterburners. The flue gas discharge is directed through the dispersion stack (D = 0.5 m; H = 10 m).

The assessment was made by comparison with the limits allowed by Law 278/2013.

According to results presented in chapter 4.2.3. the calculated values were below the limit allowed under ELV of Law 278/2013.

As the burners in the incinerator are among the most efficient (very low NO_x) and the fuel used is LPG (sulphur content <10ppm), the emissions of dust, NOx and SO_2 in the flue gas will be very low. Burning will be controlled so that CO emissions will be low.

Because 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[66] were used.

Table 71 - Maximum values of pollutants emitted into the atmosphere at the outlet of incinerators with secondary combustion chamber

Parameter	VLE[1]	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):

[66] 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

[1] average daily emission values according to Annex 6, L 278/2013

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 (SO2):

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. (Acc. 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% o2);

Regarding dust: It is estimated that the combustion of purified gas is not a significant source of dust emissions. Cf. 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/Nm^3 , 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/Nm^3 in combustion gas determined as average daily value;
- 100 mg/Nm^3 in combustion gas from all measurements (determined as half-hourly averages taken over 24 hours);
- 150 mg/Nm^3 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:

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Table 72 - 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 73 - Daily average emission limit values

Pollutant	(mg/Nmc)
Total dust	10
Organic substances in 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

b) *Concerning undirected emissions:*

In view of the measures envisaged it is considered that there will be no specific detectable emissions in sensitive areas.

Regarding undirected VOC *emissions*: diesel tanks are equipped with level sensor, return pipe to the plant for collecting emissions in case of leaks. The route of the fuel (diesel) from the tank to the thermal engines of the vehicle or vehicle equipment is sealed, through pipes. All these features are designed to reduce uncontrolled VOC emissions to 0.

Concerning waste gas emissions: CO, SO2, NOX and VOC emissions resulting from the combustion of diesel fuel used by means of car transport are totally insignificant because:

- traffic intensity in the premises will be reduced
- only low-emission vehicles within legal limits (EURO 5 and EURO 6) will be used

c) *At imission*

The prediction of ambient air pollution levels generated by all sources related to the studied objective, at immission, was carried out by mathematical modelling of concentration fields.

The assessment was made by comparison with the provisions of STAS 12574/1987 which includes "Air quality conditions in protected areas" and/or Law 104/2011 on ambient air quality.

For the determination of pollutant concentrations at immission, a mathematical modelling program was used to calculate the concentration field. The coordinate system was chosen in such a way that the whole area possibly affected was covered. With the help of the program used, maps-diagrams of pollutant concentrations at ground level were drawn up, on which the proposed target, the possibly affected neighbourhoods and the iso-concentration curves for the emitted pollutants were shown.

Centralisation of data obtained from mathematical modelling of pollutant dispersion in the atmosphere:

CARBON MONOXIDE (CO)

Table 62 - Variation of CO concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Ecosystem			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)						
8 h	24 h	1 year	8 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
900			0,4						10000	7000	5000				< VL
2900			0,2												< VL
Bulgaria[67]			**0,1**												< VL
Ruse[68]			**0,1**												
4000			0,1												< VL
5300			0,08												< VL
6700			0,06												< VL
10000			0,02												< VL
15000			0,008												< VL
	1380			0.1											< VL
	1660			0,08											< VL
	3340			0,05											< VL
	Bulgaria			**0,03**											< VL
	Ruse			**0,03**											
	5080			0,03											< VL
	10000			0,01											< VL
	15000			0,05											< VL
		760			0,02										< VL
		1290			0,01										< VL
		1500			0,006										< VL
		1900			0,004										< VL
		Bulgaria			**0,001**										< VL
		Ruse			**0,001**										
		5000			0,001										< VL
		10000			-										< VL
		15000			-										< VL

[67] at the border with Bulgaria at a distance of 3317 m
[68] at the border of the residential area of Ruse at a distance of 3856 m

NO_x

Table 63 - Variation of NOx concentration in relation to distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Annual value (µg/mc)						
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
400			1			200	140	100	40	32	26	30	24	19,5	< VL
1900			0,8												< VL
3390			0,5												< VL
Bulgaria			**0,4**												< VL
Ruse			**0,4**												
5330			0,3												< VL
355			5												< VL
10000			0,1												< VL
15000			0,05												< VL
	890			0,1											< VL
	1450			0,08											< VL
	2800			0,05											< VL
	Bulgaria			**0,03**											< VL
	Ruse			**0,03**											
	3680			0,03											< VL
	8000			0,01											< VL
	10000			0,005											< VL
	15000			0,003											< VL
		960			0,01										< VL
		1400			0,007										< VL
		1700			0,005										< VL
		2200			0,003										< VL
		Bulgaria			**0,001**										< VL
		Ruse			**0,001**										
		3880			0,001										< VL
		7900			0,00032										< VL
		10000			-										< VL
		15000			-										< VL

SO_x

Table 64 - Variation of SO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			Annual value (µg/mc)			
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
540			0,04			350			125	75	50	20	12	8	< VL
3280			0,02												< VL
Bulgaria			**0,02**												< VL
Ruse			**0,02**												
6160			0,01												< VL
7500			0,008												< VL
10000			0,006												< VL
15000			0,002												< VL
	350			0,005											< VL
	1440			0,003											< VL
	Bulgaria			**0,001**											< VL
	Ruse			**0,001**											
	3840			0,001											< VL
	6880			0,0005											< VL
	10000			0,0003											< VL
	15000			0,00009											< VL
		800			0,001										< VL
		960			0,0008										< VL
		1200			0,0005										< VL
		1570			0,0003										< VL
		2150			0,0001										< VL
		Bulgaria			**0,00005**										< VL
		Ruse			**0,00005**										
		3680			0,00005										< VL
		8000			0,000013										< VL
		10000			-										< VL
		15000			-										< VL

TSP

Table 65 - Variation of TSP concentration with distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (µg/mc)				Human health						Ecosystem			Obs.
								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 values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
605				0,02				50	35	25	40	28	20				< VL
3360				0,01													< VL
Bulgaria				**0,01**													< VL
Ruse				**0,01**													
5390				0,006													< VL
6230				0,005													< VL
10000				0,002													< VL
15000				0,001													< VL
		875				0,002											< VL
		2730				0,001											< VL
		Bulgaria				**0,0006**											< VL
		Ruse				**0,0006**											
		3770				0,0006											< VL
		4800				0,0005											< VL
		10000				0,0001											< VL
		15000				0,00005											< VL
			980				0,0004										< VL
			1640				0,0001										< VL
			2680				0,00005										< VL
			Bulgaria				**0,00002**										< VL
			Ruse				**0,00002**										
			4260				0,00002										< VL
			10000				0,00001										< VL
			15000				-										< VL

HCl

Table 66 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation (µg/mc)			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
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										

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HF

Table 67 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1630		0,0006											
2185		0,0005											
2830		0,0004											
Bulgaria		**0,0001**											
Ruse		**0,0001**											
5500		0,0001											
10000		0,00008											
15000		0,00005											
	690		0,00008										
	895		0,00007										
	1410		0,00005										
	1680		0,00004										
	Bulgaria		**0,00002**										
	Ruse		**0,00002**										
	3450		0,00003										
	4950		0,00002										
	10000		-										
	15000		-										

TOC

Table 68 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1380		0,07											
2610		0,05											
3251		0,04											
Bulgaria		**0,03**											
Ruse		**0,03**											
6045		0,02											
10000		0,007											
15000		0,005											
	715		0,008										
	1300		0,005										
	3370		0,003										
	Bulgaria		**0,001**										
	Ruse		**0,001**										
	6390		0,001										
	7500		0,0008										
	10000		0,0005										
	15000		0,0003										

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DIOXINS AND FURANS

Table 69 - 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 (µg/mc x 10)$^{-6}$				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 values[69]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0,0008				0,3									< VL
1600				0,0006													< VL
2250				0,0005													< VL
2900				0,0004													< VL
Bulgaria				**0,0003**													< VL
Ruse				**0,0003**													< VL
5600				0,0002													< VL
	1100				0,0002												< VL
	3050				0,0001												< VL
	3300				0,00009												< VL
	Bulgaria				**0,00009**												< VL
	3750				0,00007												< VL
	Ruse				**0,00007**												< VL
	5030				0,00005												< VL
		900				0,00009											< VL
		1050				0,00008											< VL
		1230				0,00007											< VL
		1600				0,00005											< VL
		Bulgaria				**0,00004**											< VL
		3450				0,00003											< VL
		Ruse				**0,00003**											< VL
		5000				0,00002											< VL
			1680				0,00001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[69] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Table 70 - 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						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 year	limit values[70]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0,08				0,3									< VL
1600				0,06													< VL
2250				0,05													< VL
2900				0,04													< VL
Bulgaria				**0,03**													< VL
Ruse				**0,03**													< VL
5600				0,02													< VL
	1100				0, 02												< VL
	3050				0, 01												< VL
	3300				0, 009												< VL
	Bulgaria				**0,009**												< VL
	3750				0,007												< VL
	Ruse				**0,007**												< VL
	5030				0, 005												< VL
		900				0,009											< VL
		1050				0,008											< VL
		1230				0,007											< VL
		1600				0,005											< VL
		Bulgaria				**0,004**											< VL
		3450				0,003											< VL
		Ruse				**0,003**											< VL
		5000				0,002											< VL
			1680				0,001										< VL
			Bulgaria				-										< VL
			Ruse				-										< VL

[70] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Conclusions on emissions and immissions

a) Concerning directed emissions:

To evaluate the level of pollutant emissions resulting from the operation of the combustion plant, theoretical calculations were made for pollutant emissions depending on the consumption and type of fuel used, calorific value and emission factor.

The calculation was performed for a calorific value of the fuel used of 11070 kcal/kg (45 MJ/kg - the lower calorific value of LPG).

The combustion source is the burners of the combustion and afterburners. The flue gas discharge is directed through the dispersion stack (D = 0.5 m; H = 10 m).

The assessment was made by comparison with the limits allowed by Law 278/2013.

Cf. results presented in chapter 4.2.3. the calculated values were below the limit allowed under ELV of Law 278/2013.

As the burners in the incinerator are among the most efficient (very low NO_x) and the fuel used is LPG (sulphur content <10ppm), the emissions of dust, NOx and SO_2 in the flue gas will be very low. Burning will be controlled so that CO emissions will be low.

Because 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[71] were used.

Table 71 - Maximum values of pollutants emitted into the atmosphere at the outlet of incinerators with secondary combustion chamber

Parameter	VLE[1]	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):

[71] 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

[1] average daily emission values according to Annex 6, L 278/2013

Low NO_x burners are used to reduce NO_x emissions. It is estimated that the permissible emission limits will not be exceeded. Cf. 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. (Cf. 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 dust: It is estimated that the combustion of purified gas is not a significant source of dust emissions. Cf. 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/Nm^3 , expressed as a half-hour average.

Concerning carbon monoxide (CO):
Carbon monoxide always occurs as an intermediate product of the combustion process, especially under sub stoichiometric 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/Nm^3 in combustion gas determined as average daily value;
- 100 mg/Nm^3 in combustion gas from all measurements (determined as half-hourly averages taken over 24 hours);
- 150 mg/Nm^3 in the combustion gas in at least 95% of all measurements (determined as 10-minute averages).

To assess values:

4. 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)
5. 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)
6. 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 72 - Half-hourly average emission limit values (mg/Nmc)

Pollutant	(100%) A	(97%) B
Total dust	30	10
Organic substances in 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 73 - Daily average 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

b) *Concerning undirected emissions:*

In view of the measures envisaged it is considered that there will be no specific detectable emissions in sensitive areas.

Regarding undirected VOC *emissions*: diesel tanks are equipped with level sensor, return pipe to the plant for collecting emissions in case of leaks. The route of the fuel (diesel) from the tank to the thermal engines of the vehicle or vehicle equipment is sealed, through pipes. All these features are designed to reduce uncontrolled VOC emissions to 0.

Concerning waste gas emissions: CO, so2, NOx and VOC emissions resulting from the combustion of diesel fuel used by means of car transport are totally insignificant because:

- traffic intensity in the premises will be reduced
- only low-emission vehicles within legal limits (EURO 5 and EURO 6) will be used

c) *At imission*

The prediction of ambient air pollution levels generated by all sources related to the studied objective, at immission, was carried out by mathematical modelling of concentration fields.

The assessment was made by comparison with the provisions of STAS 12574/1987 which includes "Air quality conditions in protected areas" and/or Law 104/2011 on ambient air quality.

For the determination of pollutant concentrations at immission, a mathematical modelling program was used to calculate the concentration field. The coordinate system was chosen in such a way that the whole area possibly affected was covered. With the help of the program used, maps-diagrams of pollutant concentrations at ground level were drawn up, on which the proposed target, the possibly affected neighbourhoods and the iso-concentration curves for the emitted pollutants were shown.

- *The project is located in an industrial area and will certainly have a cumulative effect together with the surrounding businesses in the industrial area of Giurgiu and the industrial area of Giurgiu and the industrial area of Ruse i.e. mixing of different pollutants in the atmosphere is possible. This, together with the high humidity of the area, creates a risk for secondary formation of new chemical pollutants. The risk of such a cumulative effect, as well as the analysis of the current contributions to emissions of enterprises in the areas. Giurgiu and Ruse industrial areas is not addressed in the environmental impact report;*

Answer:

The project is located on a former industrial site where no polluting activities are currently carried out, with a significant negative impact on the air environment factor.

As regards the level of air emissions generated by the operation of the incinerator and the concentration of pollutants in the immission, it has been shown that they are well below the maximum permissible emission values or below the limit values for concentrations in the immission.

Practically at the site boundary, the values determined for each pollutant individually for concentrations in immission are well below the limit values:

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CARBON MONOXIDE (CO)

Table 62 - Variation of CO concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Ecosystem			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)						
8 h	24 h	1 year	8 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
900			0.4						10000	7000	5000				< VL
	1380			0.1											< VL
		760			0.02										< VL

NO_2

Table 63 - Variation of NOx concentration in relation to distance from the emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Annual value (µg/mc)						
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
400			1			200	140	100	40	32	26	30	24	19,5	< VL
	890			0.1											< VL
		960			0.01										< VL

SO_x

Table 64 - Variation of SO_2 concentration in relation to distance from emission point

Propagation distances (m)			Concentrations determined by mathematical dispersion modelling (µg/mc)			Human health						Vegetation			Obs.
						Hourly value (µg/mc)			Daily value (µg/mc)			Annual value (µg/mc)			
1 h	24 h	1 year	1 h	24 h	1 year	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
540			0.04			350			125	75	50	20	12	8	< VL
	350			0.005											< VL
		800			0.001										< VL

TSP

Table 65 - Variation of TSP concentration with distance from the emission point

Propagation distances (m)				Concentrations determined by mathematical dispersion modelling (µg/mc)				Human health						Ecosystem			Obs.
								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 values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
605				0.02				50	35	25	40	28	20				< VL
		875				0,.02											< VL
			980				0.0004										< VL

HCl

Table 66 - Variation of HCl concentration in relation to distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation (µg/mc)			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
400		0.1		1490	74.52	52							
	775		0.01										

HF

Table 67 - Variation of HF concentration versus distance from the emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1630		0.0006		36000	20000	800							
	690		0.00008										

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TOC

Table 68 - Variation of TOC concentration with distance from emission point

Propagation distances (m)		Concentrations determined by mathematical dispersion modelling (µg/mc)		Human health						Vegetation			Obs.
				Hourly value (µg/mc)			Annual value (µg/mc)						
30 min	24 h	30 min	24 h	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
1380		0.07											
	715		0.008										

DIOXINS AND FURANS

Table 69 - 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 (µg/mc x 10)$^{-6}$				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 values[72]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.0008				0,3									< VL
	1100				0.0002												< VL
	5030				0.00005												< VL
		900				0.00009											< VL
			1680				0.00001										< VL

[72] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

Table 70 - 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						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 year	limit values[73]	upper threshold	lower threshold	limit values	upper threshold	lower threshold	limit values	upper threshold	lower threshold	
840				0.08				0,3									< VL
	1100				0.02												< VL
		900				0.009											< VL
			1680				0.001										< VL

[73] there is no worldwide limit value for the concentration of dioxins and furans in immission, but studies recommend 0.3 pg I.TEQ/Nmc - (U.S. Environmental Protection Agency) for an 8-hour averaging period

- *It is unclear whether the proposed project will lead to an increase in the spatial concentration of emission sources of the same type, thereby creating a risk of increased exposure to emissions for the population and degradation of the quality of the living environment in adjacent areas subject to health protection*

Answer:

According to all the information and analyses in the RIM and the information presented so far in this supplement to the RIM **there is "no** *risk of increased exposure to emissions for the population and degradation of the quality of the living environment in adjacent areas subject to health protection"*

- *The meteorological and relief characteristics of the project site, as well as the high humidity of the ambient air in the Danube river area, are unfavourable in the dispersion of air pollutants and contribute to their retention in the atmospheric layer close to the ground, i.e. the risk of exposure of the population to the emitted pollutants is high.In this context, the report should assess the dispersion of pollutants at the most unfavourable wind dew point for the city of Ruse.*

Answer:

As explained in the answers above in the RIM and in the study of pollutant dispersion in the atmosphere all analyses were carried out with consideration of all meteorological characteristics of the areas, even the most unfavourable ones.

Official data from the meteorological station in Giurgiu municipality and meteorological data recorded on the analyzed site with the professional meteorological station (equipped with licensed software) of SC Divori Mediu Expert SRL were used.

5. *The proposed project was put to public debate, with the central authorities registering over 400 opinions, accompanied by a petition from over 2000 citizens and the Ruse authorities receiving 32 negative opinions and a petition signed by 1692 citizens of the city against the implementation of the project. The public comments can be summarised in the following main points:*

Answer:

It is necessary to analyse what questions were answered by the people who signed the opinions and petitions in question, what level of information they had (to see if they were misinformed by different people and media) in order to be able to draw a conclusion whether these opinions are based on real information and a correct and relevant analysis.

With regard to the "*32 negative opinions*" issued by the "*authorities in Ruse", the "authorities in Ruse*", which institutions are referred to, what documentation was used to issue these opinions and what is their content, so that we can formulate the necessary answers for each of these authorities.

- *according to opinions submitted by natural and legal persons, a detailed and realistic assessment of the impact of air pollution emissions and an assessment of the environmental impact on the cross-border territory of Ruse is lacking. In the EIR Bulgaria is mentioned for the first time on pages 104-105 in Chapter 6 - "Description of the significant effects that the project may have on the environment" with two tables and a few sentences: "The environmental factor air will be affected by the project within acceptable limits, without quantifiable effects; Settlements may be affected by air quality (pollutant concentrations in emissions) and noise"; in the same chapter 6, (on page 113, where Bulgaria is mentioned again - only tables and formulas are listed and it is not clear from the whole presentation of this chapter to* *which locality (Giurgiu or Ruse) and to which environment (Bulgarian or Romanian) the findings refer and to what extent they indicate or exclude transboundary impacts;*

Answer:

This has been answered at length and in detail in the previous formulations (above).

As for the wording "*Towns may be affected by air quality (pollutant concentrations in emissions) and noise*" it is not at all in the RIM!

- *specific, detailed and descriptive analysis of the geographical, climatic and meteorological conditions of the transboundary impact on air pollution is missing, taking into account the specific wind dew on the territory of Giurgiu and Ruse municipalities. The opinions also mention the lack of a specific, detailed and comprehensive analysis of the transboundary impact of pollution, taking into account all polluters in the area. It is noted that only enterprises operating in the territory of Giurgiu municipality are mentioned, that this part of the analysis does not take into account polluters in the area of Ruse (such as Linamar, TPP Ruse, etc.), which makes it incomplete, inaccurate and does not provide reliable data on the overall scale and coefficient of transboundary pollution. It is proposed that the impact assessment should consider all air pollutants on both sides of the Danube in a comprehensive manner, taking into account wind gusts, constant complaints from citizens about odours and relevant reports from the Regional Environmental Protection Inspectorate on exceedances of limit values for all pollutants. In this respect, the public considers inadequate any judgement on (the degree of) air pollution which is derived from taking into account the pollution coefficients from a single source or only from sources located on one side of the Danube, according to the submitted report. in the absence of an aggregate estimate of total pollution from all sources, air quality is neither established nor guaranteed in any way;*

Answer:

These issues have been answered at length and in detail in the previous formulations (above).

With regard to the wording "*polluters in the Ruse area (such as Linamar, TPP Ruse, etc.) are not taken into account*" we make the following clarifications:

a. the concentrations of pollutants in the atmosphere determined by mathematical modelling of the dispersion of pollutants in the atmosphere at the Romanian border of Ruse are well below the limit values
b. the quantities of pollutants emitted per unit time from the operation of the incinerator are very small and the effect of their propagation in the atmosphere does not reach the values to be taken into account at the Romanian border of Ruse

there is no case for an analysis of the cumulative effect with that generated by economic agents such as *Linamar, TPP Ruse* in the city of Ruse. Rather, the impact of their activity on the health of the inhabitants of Ruse and, more importantly, on the inhabitants of the municipality of Giurgiu and the Romanian localities bordering the area should be analysed.

- *In the opinions recorded, the public expressed concern about the lack of analysis of air pollution from the previous source, the chemical plant in Giurgiu, on the site of which the incinerator is to be built. A parallel is drawn with the situation during the operation of the Verachlm chemical plant and an analysis of information on air pollution from this source due to air currents, geographical and climatic conditions of the site is requested. "*

Answer:

As stated in the previous answers, it is not possible to link the impact on the environmental factor air and the pollution generated in the past by the operation of the Giurgiu Chemical Plant (Verachim) and the operation of the incinerator in question.

Platform 1 (which was the most polluting) of this plant was permanently closed in 1988.

In 2002 the company had 100 employees and the production of aggressive chemicals was stopped with a direct effect on stopping environmental air pollution.

The chemical substances used or produced in this plant and the emissions generated have nothing in common with the activity of the incinerator under review.

It is illogical and impossible to draw a parallel between air emissions from the operation of the chemical plant and air emissions from the operation.

6. *on the basis of the above, the Bulgarian side requests that the documentation be revised and completed with the requested information and retransmitted.*

The texts shown in green are taken from the additions made in RIM REV. 1
Text shown in blue represents additions made in RIM REV. 2