International POPs Elimination Project

Fostering Active and Efficient Civil Society Participation in Preparation for Implementation of the Stockholm Convention

---

Košice Municipal Waste Incinerator: A POPs Hotspot in Slovakia

Priatelia Zeme – SPZ (Friends of the Earth) (formerly Spoločnosť priateľov Zeme)

P.O. Box H 39, 040 01 Košice
Slovakia
Tel.fax: 00421 55 6771677
e-mail: spz@spz.sk
www.priateliazeme.sk/spz

Slovakia
July 2005

Priatelia Zeme SPZ

About the International POPs Elimination Project

On May 1, 2004, the International POPs Elimination Network (IPEN http://www.ipen.org) began a global NGO project called the International POPs Elimination Project (IPEP) in partnership with the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Program (UNEP). The Global Environment Facility (GEF) provided core funding for the project.

IPEP has three principal objectives:

- Encourage and enable NGOs in 40 developing and transitional countries to engage in activities that provide concrete and immediate contributions to country efforts in preparing for the implementation of the Stockholm Convention;

- Enhance the skills and knowledge of NGOs to help build their capacity as effective stakeholders in the Convention implementation process;

- Help establish regional and national NGO coordination and capacity in all regions of the world in support of longer term efforts to achieve chemical safety.

IPEP will support preparation of reports on country situation, hotspots, policy briefs, and regional activities. Three principal types of activities will be supported by IPEP: participation in the National Implementation Plan, training and awareness workshops, and public information and awareness campaigns.

For more information, please see http://www.ipen.org

IPEN gratefully acknowledges the financial support of the Global Environment Facility, Swiss Agency for Development and Cooperation, Swiss Agency for the Environment Forests and Landscape, the Canada POPs Fund, the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM), Mitchell Kapor Foundation, Sigrid Rausing Trust, New York Community Trust and others.

This report is available in the following languages: English

Košice Municipal Waste Incinerator: A POPs Hotspot in Slovakia

Introduction

Troubles with Environmental POPs Pollution in Slovakia

The persistent organic pollutants (POPs) in Slovakia are still of lower interest than the better known ones like SO_2 despite the fact that in the elimination of the others significantly more precautions have been realised than in the elimination of POPs. We believe that it is necessary to redirect higher attention and seriousness to the POPs than has occurred thus far. Compared to some of the other better known pollutants, the impact of POPs is worsened by their persistency, bio-accumulativeness and toxicity that begin with only small amounts.

As the results of investigations and inventories of relevant institutions indicate, in Slovakia there are a significant number of sources for polychlorinated dibenzo-p-dioxins (PCDD), polychlorinated dibenzo-furans (PCDF) and polychlorinated biphenyls (PCBs). In the case of

PCBs, this unfortunately has been very clear to the Slovak inhabitants of the Michalovce Region which was contaminated by production activities of the former Chemko Strážske. [1] Despite that the existing data revealing very high levels of dioxin emissions from incinerators, there is relatively few information about dioxins in Slovakia.

The major causes of environmental POPs pollution in Slovakia include:

Unconsolidated illegal landfills with obsolete pesticides
To a large extent these represent pesticides dumped freely in the buildings of bankrupt cooperatives. State organs estimate the old POPs pesticides stockpiles in the Slovakian Republic to be 300 - 400 tons. Each of them acts as pesticide time-bomb which may endanger human health and environment.

For example, an NGO survey of a warehouse of a bankrupted cooperative in the village of Bielovce found 2 tons of toxic substances endangering not only the environment but also human health. Samples of the chemicals from Bielovce confirmed the presence of Toxaphene among other chemicals, even though it has been forbidden in Slovakia since 1984.

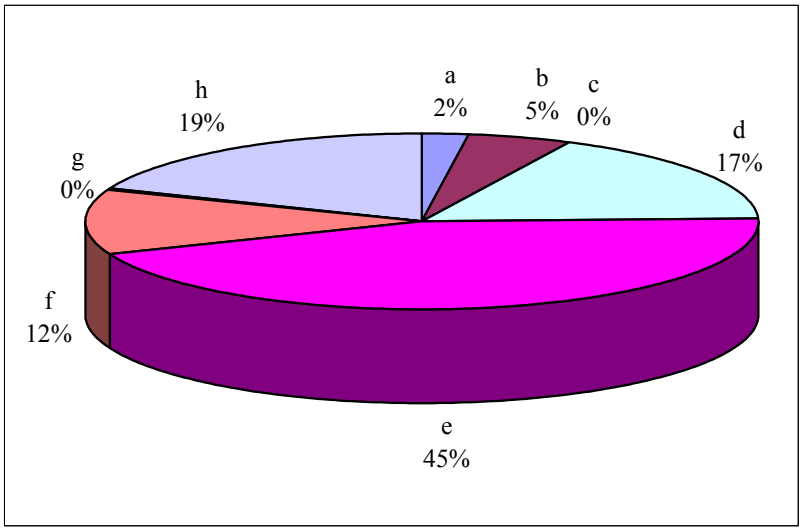
The building, where those pesticides lie is dilapidated with broken windows and doors. Part of the roof has already fallen down, so that leaking water can enter the room where the hazardous chemicals are dumped. The measurements not only revealed the presence of hazardous pesticides in the building but also in the soil in samples taken up to the 10 metres from the building. Other pesticides including Athrasine, Simasine and Lindane were also detected. There is a real jeopardy of their penetration into ground water.

PCB Pollution in the Michalovce – Strážske Region
Several tons of PCBs, which are slowly released into the environment, lie in the sediments of the canal leading from Chemko Strážske to the Laborec River. A ban on consuming the fish caught in the Laborec River and the Zemplínska Šírava water reservoir was enacted. The PCB contamination is not only a health problem for the local people but also an economic problem considering that it is a major tourist area in the region. Concentrations of PCBs in the bodies of fishermen who consume the fish from Laborec and Šírava were measured as higher than those in the bodies of former Chemko Strážske workers, who had been directly working with PCBs.

Obsolete incinerators and the aim to build new ones
According to the Slovak Hydro-meteorological Institute analysis, incinerators are one of the most productive sources of POPs and especially dioxins released into the environment.

Between 1.7- 1.8 millions of tons of municipal waste were produced yearly from 1996 – 2000. In Slovakia with 5.3 millions of inhabitants this comes out to be 315– 320 kg per 1 inhabitant yearly.

Municipal waste handling in year 2000



a - waste used materially as secondary resources (it is estimated that using of secondary resources is actually higher)
b - waste composting
c - waste used energetically (0.05 %)
d - waste disposed at landfills within the municipal area
e - waste disposed in landfills out of the municipal area
f - waste disposed in incinerators with energy generation
g - waste disposed in incinerators without energy generation (0.03 %)
h - other ways of waste handling

Approximately 579,556.5 tons of waste was incinerated during in 2000; 81,496.4 tons were "other waste" (mainly waste from wood), 208,901.71 tons were uncommon waste and 89,159 tons were hazardous waste (mainly the waste from chemical processes).

The percentage of incinerated waste fluctuated from 1.6 – 3.7% between 1996 – 2000, which means 0.2 – 0.6 millions of tons from the total amount of waste. Handling with the "other waste" which was approximately 0.3 millions of tons, is not included in the systems of waste handling between 1996 - 1999.

Twenty-five incinerators of industrial waste and 2 incinerators of municipal waste (in Bratislava and Košice) were operating in the Slovak Republic in 2000. Five of them did not exceed emission quotas and 22 waste incinerators did exceed emission quotas set on pollutants, including dioxins [resource: POH SR do r. 2005, MŽP SR].

Slovakia has negotiated a transition period for fulfilling these emission quotas up to 2007, but in practice history shows that many of the owners will wait until the last moment to come into compliance.

The rising number of plans to build new incinerators for medical, hazardous and municipal waste adds to the problem. Topolčany, Dubová, Šaľa, Istebné and other villages in the Prešov and Košice Regions are endangered by the building of new waste incinerators with POPs production. These goals are pursued under non-transparent circumstances and ignorance of analysis on using and cheaper and cleaner alternatives. The Friends of the Earth constantly

remind policy makers and the public of a waste management hierarchy that can reduce and eliminate POPs pollution of the environment:

1. Prevention of waste production and hazardous materials
2. Recycling
3. Disposal by the safest accessible technology

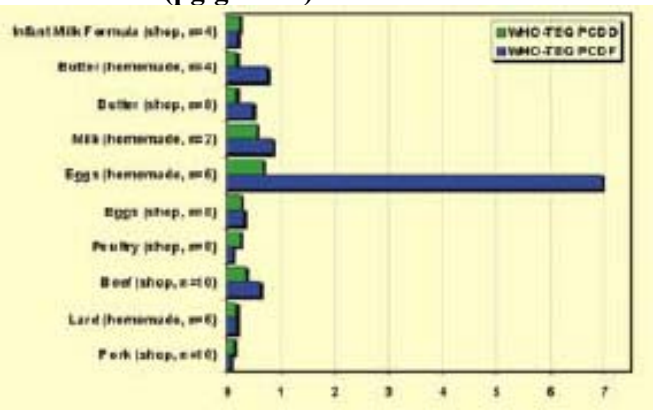
In this work we submit more detailed information about one of the most problematic sources of high POPs production released into environment – the Košice Municipal Waste Incinerator.

Table. 4 : **Dioxins and furans emissions in the Slovak Republic (g TEQ) in year 2001** [12]

	Source of PCDD/F - Category	Atmosphere	Water	Soil	Products	Waste
1	Waste incineration	20.274	0	0	0	58.205
2	Ferrous and non-ferrous metals production	42.575	2.9E-07	0	0	19.177
3	Energy and heat production, thermo processes	5.244	0	0	0	0
4	Mineral products production	0.610	0	0	0	0.010
5	Transport	0.524	0	0	0	0
6	Uncontrolled incinerating processes	0.466	0	0.373	0	0
7	Production and using of chemicals	1.9E-05	0.002	0	0.781	344.170
8	Various	0.062	0	0	0	0.02
9	Waste landfills	0	0	0	0	0
	Total	69.756	0.002	0.373	0.781	421.577

[12] Mgr. R. Chraštieľ, PaedDr. M. Murín, RNDr. J. Gavora, Ing. K Magulová: Technická správa V. - Návrh národného realizačného plánu pre implementáciu Štokholmského dohovoru o POPs v SR, April 2004, SHMÚ SR, MŽP SR.

Average concentrations (pg/g in fat) of PCDD/F in the food samples of animal origin



National Reference Centre for Dioxins and Related Compounds, 1st Intl Symposium on Recent Advances on Food Analysis, Praha, 4-7.11.2003

Košická spaľovňa komunálneho odpadu a emisie POPs.
Košice Municipal Waste Incinerator and POPs Emissions

The municipal waste incinerator (MWI) is located close to the southern border of Košice, belonging to the land register of the Kokšov- Bakša village.

Košice is the second largest city in Slovakia. It is a metropolis of eastern Slovakia situated near the borders of Hungary (20 km), Ukraine (80 km) and Poland (90 km). The city itself has within its administrative borders an area of 244 km^2, 242,000 inhabitants, and a residential density reaching 992 people/km^2. The city lies in the Košice basin in a wide valley of the Hornád River. It is bordered by the slopes of the Slovenské Rudohorie Mountains from the west and encircled by the Čierna Hora Mountains on the north and by the Volovec Hills on the west. It lies at 48˚ 43' of northern latitude and 21˚ 25' of eastern longitude.

Rozloha v ha	24 382	**Area in ha**
poľnohospodárska pôda	9 270	agrarian land
nepoľnohospodárska pôda	15 112	non-agrarian land
Štruktúra pôdneho fondu v %		Structure of lands available in %
poľnohospodárska pôda	38,0	agrarian land
nepoľnohospodárska pôda	62,0	non-agrarian land

The Kokšov-Bakša Village, with 1,057 inhabitants, neighbours with Košice from southern side.

An eminent and permanently enduring problem in the POPs issues and waste management is the MWI. The tonnage of municipal waste produced yearly in Košice has increased from 71,070 tons (1992) to about 91,735.7 tons in 2000. The majority of this waste is incinerated in Košice (according to state statistics it is 63,212 tons).

The Košice incinerator began operating in the 1990s under the ownership of the city. Since its beginnings, the incinerator was equipped for emission prevention with only an electrostatic separator of solid particles. Any other mechanisms for elimination of hazardous emissions were not installed until recently.

The POPs – PCDD/F liberation into the atmosphere is therefore considered to be the main route of environmental dioxin contamination. Seventy percent of the prevailing winds blow southwards from Košice, so the POPs emissions flow particularly to the villages located south of the incinerator. Some of the dioxin emissions end up at a controlled landfill in the Košice Myslava ward. Here, toxic incinerator ash containing high concentrations of PCDD/F is mixed with the other types of waste. According to the workers of the V.O.D.S. company which owns the landfill, "... the ash suitably fills the gaps and slots at the landfill..."

Timeline of Events Summary

1992 – 1998

The selection procedure for conducting a study on waste handling "Complex solutions for municipal and industrial waste" was announced in 1992. Various companies registered including three from abroad. The functionaries from different management positions participated in the reference visits even if it should have been a business for experts. The Selection Committee chose a German company, Rethmann, for conducting a study on waste management for the city of Košice.

The only entity handling municipal waste at that time in Košice was the Technical Service of the Košice City (Technické služby mesta Košice, TSMK - municipal company) which was providing waste disposal by incinerating and landfilling.

The solution proposed by Rethmann was to transform TSMK into a business company TSMK - Rethmann which would provide:
1. Collection of municipal waste and maximal reuse of secondary resources gained within separated waste collection,
2. Separating and processing hazardous waste from municipal solid waste,
3. Using existing facilities for processing and storing of the waste,
4. Founding and financing a new controlled landfill.

This proposal was elaborated and submitted for approval to the Members of the Municipality. The Košice Municipality did not agree with the creation of such a business company. Instead, at the same meeting, the Members voted to support the transformation of TSMK to two business companies whose founder was the city of Košice:
1. TSMK - providing waste disposal and cleaning of the city,
2. Waste Disposal Centre - providing waste incineration and land-filling.

In the beginning, the management of the Waste Disposal Centre was keen on developing an integrated waste management system, not just a waste incinerator. It belonged to one of the first initiatives which paid attention to the production of POPs – mainly of dioxins in Slovakia. In 1994, they initiated PCDD/F emissions measurements in the Košice MWI. The results were about 80-times higher than the usual levels of PCDD/F emissions in European Union (EU) countries (0.1ng TEQ/m^3).

The city realised the first steps for separated waste collection and recycling implementation in Košice. They placed containers for separated waste collection around the city and launched an information campaign. Despite these initial efforts, several months later they started to remove the containers for paper collection allegedly because the people set them on fire. However, the paper containers were placed in other cities and without any excessive problems of this kind and eventually, they were able to deal with them. A question was why they "were not able to deal with them" only in Košice. One of the possible answers was that the economic profit of the incinerator owner and operator depended on the constant flow of a large amount of combustible waste. Fluctuations in the waste amount or its deficiency are not good for the economy of an incinerator and its technology. As anywhere else, even in Košice, the new management realised that intensive separation and recycling (which might eliminate dioxins emissions) was in contradiction with the economic interests of incineration plant.

Since 1999 new emission standards for the sources of air pollution, including the Košice incinerator should have been in legal force. That is why in 1997/98 the selection procedure for an incinerator investor included someone who would provide emissions consistent with Slovakian laws. Unfortunately, the legislative standards valid in Slovakia since 1999 did not contain EU dioxin standards. For that reason, the Society of Friends of the Earth led a campaign to encourage the city of Košice to adopt criteria for selecting an investor that included a requirement to operate the incinerator according to EU dioxin standards (0.1ng TEQ/m^3). Friends of the Earth also encouraged to lower the incinerator capacity and to develop waste separation and recycling facilities within the city of Košice.

FOE's efforts in the Selection Committee requiring providing technology for PCDD/F emissions elimination according to EU limit levels in its conditions. The French company, EdS, and the existing operator, CZO, got into the final group. Despite this, the winner of the competition for building of APC to control dioxins emissions has not been chosen.

The Košice MWI was still incinerating thousands tons of the waste each year with only an electrostatic precipitator as pollution control and without any filtration technologies to decrease more polluting substances emissions as required by the Slovak and EU legislation.

In 1999, when the new emission standards came into force, they were still not fulfilled by almost 1/3 of the sources of air pollution. The Ministry of Environment reacted to that situation strangely - it approved a General Exception for all these sources, including the Košice MWI, valid until the end of 2006.

As a result, discontent in the villages affected by the operation of the MWI increased. They were the villages in the path of emissions south of Košice where 70% of the prevailing winds blew. Afflicted villages contacted the Society of Friends of the Earth and another local ecological organisation, Sosna, and started edification and media activities and negotiations with the Municipality about a faster solution. However, their efforts were fruitless.

1999

The Košice Municipality decided to organise a second selection procedure for a "strategic partner" for the Košice MWI reconstruction in 1999. The winner was a local company, Ekothermal, which in 1999 promised to reconstruct the incinerator within next two years so that the emissions would be lowered to the level required by the Slovak legislation. The company planned to invest 670 million Sk for this purpose from its own sources. However, the reality was even worse.

Ekothermal was only able to buy new vehicles for waste collection and city cleaning in the beginning of its work, which cost the city of Košice City a lot of money. In addition, the mayor and the municipality signed economically disadvantageous contracts with the company resulting in intensive, long-term, high cost projects that granted a monopoly to Ekothermal over the entire Košice area. Later, representatives of the Košice Municipality confessed that the contracts were disadvantageous to the city (e.g. by J. Repovská, Korzár 12.10.1999). Large financial groups (e.g. Delta Management) had gradually been gaining an influence within Ekothermal. Furthermore, the city of Košice was at that time seriously in debt which could be another reason why it slipped into further debt to Ekothermal. The non-payment of the Košice Municipality to Ekothermal led to interruption of waste collection in October 2000

resulted in the piling up of waste in the surroundings of the containers. Despite their promises, Ekothermal did not start with an economically expensive reconstruction of the waste incinerator and they did not make significant progress in waste separation or recycling. In fact, the Košice Municipality had to face judicial prosecutions (which the City lost) of Ekothermal. The legal process ended up lasting significantly longer than the time period that the company was supposed to provide waste management in Košice. In 2001, criminal prosecution of the Eckothermal's holding company, J.R., resulted in a fraud verdict and fine of 60 million Sk was launched.

2000

The mayor of Košice declared in the media an interest in waste import from surrounding counties (including neighbouring Prešov County) and even countries such as Hungary for "…better economical use of incinerator potential…" after the reconstruction of the MWI.

At the end of 2000, the Košice Municipality organised another – already the third selection procedure for new investors to modernize the Košice MWI so that it would fulfil the Slovak and EU emission standards. The winner was a consortium of Italian companies, Four Italy, with interests from the cities of Verona, Ferrara, Modena and Venice.

In September 2000, citizens associations Society of Friends of the Earth, Sosna and an association of afflicted villages "Mini-region Hornád" organised a protest meeting against reconstruction of the Košice MWI. The reason for the protest was the disregard for the long term requirements of afflicted villages and ecological NGOs in the matter of dioxin production, recycling and waste incineration. The demonstration took place in front of the Košice Municipality and about 200 citizens participated. Its aim was to reinforce precautions which would eliminate dioxin emissions to the level required by EU and to develop waste recycling. They intensively started informing local media about issues of excessive POPs – dioxins emissions from the Košice MWI. However, the reactions of the Municipality were still just declarative without any real steps for improvement. The required modernisation of incinerator was stalled; protest letters of citizens and Friends of the Earth about the low quality of separated waste collection for recycling were pilling up; and the city did not even have the financial means needed for expensive incinerator reconstruction.

2001

On April 2001, the city of Košice and Four Italy signed a contract and founded an enterprise for waste management, Kosit a.s. Fifty-one percent of its shares were held by the Italian investors, 34% by the city of Košice, and 15% by a private Slovak company, Hooch. The city purchased a new enterprise, Kosit and a waste incinerator for 200mil. Sk.

The Italian investor Four Italy contracted to invest at least 650 million Sk to overhaul the incinerator so that it would fulfil EU parameters. The Italian investor and incinerator representatives were in different discussions presenting different expenses. For example, on 27 September 2001, the chairperson of Four Italy management, Vander Maranini, declared that the reconstruction of the waste incinerator would cost approximately 850 million Sk but in other articles the total sum was 700 million Sk.

The Municipality proposed (due to an incentive of Kosit) adjustment in the Generally-binding Ordinance of Košice City on municipal waste handling in the autumn of 2001, ordering compulsory incineration of all combustible waste from Košice. It did not allow any other handling with municipal waste which placed the city in contradiction with the Slovak and EU legislation on waste management and also on POPs elimination which prefers waste production prevention and recycling before incinerating. After the protests of Society of Friends of the Earth, this goal was cancelled.

2002

In March 2002, A. Marchini, General Director of KOSIT, presented an attempt to enlarge the volume of incinerated waste by importing it from remote Slovak regions for economical reasons in the most prominent regional journal Korzár,. Concurrently, he claimed that with an investment of 150 – 200 millions Sk they would reconstruct the waste incinerator at the level of EU standards by the end of 2003. Marchini rejected the criticism of Friends of the Earth and other NGOs that for such a relatively "small" amount of money it would not be possible to provide certified technology for the incinerator so that it would fulfil EU emissions standards for dioxins and other substances.,

In December 2002, the deputy of the waste incinerator management, A. Makatúrová (Korzár, 2.October 2002) confessed that the Italians were just preparing for reconstruction and that the Košice incinerator would not fulfil EU emission standards for dioxins and other substances in 2003 as agreed.

Kosit did manage to make some small steps towards better waste handling in some parts of the city by implementing separated waste collection for recycling. Kosit placed several hundred colourful containers for paper, plastics, metals and glass collection.

2003

The Košice incinerator remained unchanged more than 10 years after the first selection procedure to modernize it to reduce emissions including POPs. The poor, ineffective electrostatic precipitator remained the only pollution control device and the incinerator lacked any technology for PCDD/F emissions elimination. The separated waste collection for recycling was also still limping along with limited implementation. The investments into recycling represented just a fraction of the investments into the incinerator leaving a very low rate of separation and recycling.

The incinerator was still producing high PCDD/F emissions concentrations because the technology was still the same. Reconstruction for emissions elimination, including POPs, had not happened despite the following circumstances:

- Promises of CZO in the 1990s that it would be done by 1999
- Promises of Ekothermal in 1999 that it would be done within 2 years
- Promises of Four Italy / Meta that it would be done by the end of 2003.

2004: Conflagration, dioxins, and a cover-up

By the beginning of autumn 2004, the citizens of Košice started to complain that the company Kosit was removing blue containers for paper collection and that they did not have a place to put already separated paper. To explain, Kosit used a well-known argument which CZO had used years ago: they alleged people were setting the paper containers on fire. Society of Friends of the Earth investigated the allegations but did not receive any information supporting this idea. Like before, the desire for combustible material for incineration appeared to be the driver for removing the small recycling effort.

At the time of this writing, the incinerator still does not have any equipment for reducing dioxin emissions and therefore still does not meet the standards of the EU.

Two other important events took place in 2004. The first was refusing to give environmental or economic information about the incinerator to local citizens and their associations. Since the summer of 2004 to the present time, the Italian management of Kosit refuses to give all of the information required by the citizens association Society of Friends of the Earth despite the letter and telephone requests. In last months, the citizens association Society of Friends of the Earth has submitted an information request under access to information regulations of the government. This request has been refused by Kosit in violation of the law. The company still refuses to publish the information as of this writing.

Conflagration in the Košice MSW Incinerator

A serious conflagration lasting 30 hours burst out on 2 June 2004 at lunch time in the MWI near Košice, owned by the Kosit Company. According to the information which Society of Friends of the Earth gained, municipal waste in the rampart caught fire. The rampart has volume of 6600 m^3 and it was one-third full. The fire was reported to authorities at 12:20 pm. Murky smoke was observed by the citizens living a few kilometres away from Košice. The fire-fighters had to call for help from the surrounding villages and U.S. Steel. Fire-fighters could not get the heavy conflagration under control for a long time despite using about 100,000 litres of water. Observing journalists said that from the locality of the fire sounds strongly resembling explosions were heard.

The out of control conflagration led to even greater releases of toxic substances from the Košice incinerator. Various components of the municipal waste contain heavy metals or chlorine. Upon combustion with the other waste components irritable hydrogen chloride and highly toxic dioxins are released into the environment. Other likely hazardous waste components fed into the incinerator include batteries, paints, and thinners. These toxic substances escape from the waste incinerator under normal operation however during the uncontrolled conditions of the fire even greater amounts would be released. During the fire, temperatures of combustion are likely to be highly variable causing inadequate oxidation of the waste. Such conditions are ideal for creation of harmful substances such as dioxins which are then released in high concentrations.

The mayor of the Košice's neighbouring village, Mr. Cyril Hudák, said, "The heaviest smoke was rushing from the Košice Incinerator on 2 June around 15:0-0 -16:00 o'clock. Fortunately, the prevailing winds were drifting to the east towards an uninhabited part. Yet, in the evening, I was observing the situation with concern in case the wind direction changed and the smoke would turn towards our village. In the utmost case, I was prepared to evacuate the village."

On 3 June 2004, Society of Friends of the Earth sent a request to the Minister of Environment, L. Miklós, calling for a precise investigation of the conflagration and for gaining the Ministry's support in reconsidering the aim to reconstruct Košice MSW Incinerator as it is even a worse idea than before the fire.

Reconstruction should come only after an economical-environmental analysis which would compare it with an alternative program of recycling.

The reconstruction of the MWI is still planned. The alternative which the Society of Friends of the Earth proposes is to focus on waste prevention, improving the separated waste collection system, recycling, bio-waste composting, and mechanical-biological treatment of residual waste. Such a "recycling approach" may eliminate POPs - dioxins production in a more effective and economical way than just pollution control technology. It will also decrease the amount of waste compared to the MWI decreasing of volume, in a much more environmentally friendly manner. Moreover, the "recycling approach" is according to the analysis, e.g. from the Czech Republic, cheaper than investments into incinerator reconstruction.

The Society of Friends of the Earth sent a letter to the mayor of Košice. Z. Trebuľa. The letter requested the mayor to appraise the goal for incinerator reconstruction and to do a comparison of this goal with an alternative for an intensive recycling program. The Society of Friends of the Earth, based on a similar analysis from other countries, suggests that it is more effective to focus on recycling than on incineration. In the case of the same results from an analysis done in Košice, the goal of reconstruction would be redirected to gradually substituting waste prevention and recycling for the incinerator. The Society of Friends of the Earth has also asked the Košice municipality to provide precise control mechanisms which would prevent another large uncontrolled conflagration in the waste incinerator.

Activities of Friends of the Earth, other citizens' associations and afflicted villages

Activities for elimination of environmental pollution by persistent organic pollutants – dioxins from the Košice incineration plant were launched in the second half of the 1990s thanks to the work of the Society of Friends of the Earth. It has been and still it is a leader of local citizens' activities as well as counsellor in this matter for local villages. Later on, the other local citizens associations, e.g. Sosna, supportably joined the activities.

The first actions for elimination of the dioxin production and the Košice incinerator in favour of cleaner alternatives such as separation and recycling - started in 1997 - 1998. Various press releases were published concerning an already opened competition for a new incinerator operator. A small public meeting, where the negatives of the goals were presented and dioxins elimination and recycling development was demanded, was held before the Municipality. In the same moment, they submitted alternative proposals to the Mayor based mainly on recycling and PCDD/F emissions minimising.

In 1999, Society of Friends of the Earth addressed all Members of Municipality by letters and negotiations because of the selection procedure for the city partner in incinerator reconstruction.

Friends of the Earth realised the same activities, with the same aim, also in 2000 and 2001 during the third selection procedure in concert with other actions. In addition to the letters and negotiations with the Members, we started to cooperate with afflicted villages, inform local citizens about dioxin production from the Košice MWI and about alternatives. We organised seminars and discussions with the mayors of afflicted villages. We published many press releases concerning dioxins issues produced by the incinerator and the recycling alternative. Citizens associations organised round-table discussions with the attendance of incinerator representatives in the presence of local mass-media. We asked the mayor to require fulfilling of dioxins emissions standards respected in the EU by the Selection Committee. The city of Košice agreed and required compliance with EU dioxins emissions standards after the incinerator reconstruction as part of the selection procedure

In September 2000, the Society of Friends of the Earth, Sosna and association of afflicted villages Mini-region Hornád organised a protest meeting against the reconstruction of the Košice MWI. The demonstration took place in front of the Košice Municipality with about 200 citizens participating.
Furthermore, in 2000 Friends of the Earth, other citizens' associations and the afflicted villages protested against the publicly declared goal to import waste for the Košice incinerator from abroad.

In autumn 2001, the Municipality proposed, due to an incentive of Kosit, adjustment in Generally-binding Ordinance of the Košice City about municipal waste handling, newly ordering the incineration of all combustible waste from Košice. It would not allow any other way of municipal waste handling, which contradicted Slovak and EU waste management legislation that gives preference to preventing waste and to recycling before incineration. The Society of Friends of the Earth protested against this goal by the letters addressed to the Municipality and its Members and by articles in media. Thanks to this, the Municipality had to withdraw its proposal.

Refusing to give information to citizens

Kosit refuses to give information about POPs emissions or the costs to operate the incinerator.

The deputy of the Society of Friends of the Earth met with the director of Kosit in September 2004. The purpose of the meeting was to clarify the following questions:

- expenses on the planned and existing reconstruction of the incinerator
- a comparison between incinerator expenses and separated waste collection in a recycling program,
- extent of waste separation and recycling in Košice,
- technology planned for PCDD/F emissions prevention,
- Košice MWI PCDD/F emissions.

They also inquired whether Kosit or the city of Košice or another party had realised an economical-environmental study which would show the benefits of the current situation of MWI reconstruction and a low rate of waste separation.

The General Director of Kosit, G. Giunta, did not answer most of the questions, apologizing that they were technical and economical questions to which he could not answer. However, Giunta promised to arrange a dialog with experts who would answer them. He asked the deputy of Friends of the Earth to send him those questions by mail or fax and promised that Kosit would answer in a short time.

NGO - Society of Friends of the Earth supplied the questions in writing as requested by director of Kosit Company on 1 October 2004. The Kosit Company did not answer.

Friends of the Earth asked Kosit for the same information again on 28 October 2004 through an access to information regulation of the Slovakian government. According to this law, the Kosit Company had to give the information within 10 days. However, Kosit again did not answer in the time limit set by a law.

On 22 November 2004, Friends of the Earth sent a warning letter to Kosit informing them that they had not complied with the access to information regulation. Friends of the Earth noted the possible sanctions for failure to respond and requested the same information for a fourth time.

On 23 November 2004, G.Giunta, Director of Kosit, repeatedly refused to give any of the information. He claimed that he was a private physical person and that the access to information regulation did not apply to him. Giunta did not mention releasing the information voluntarily.
Society of Friends of the Earth asked the Košice Municipality for contract between the City and Italian investor, from which arises that Kosit a.s. deals with public finances and therefore In contrast to Guinta's claim, he is required to respond to inquiries under the access to information law. Since he refused to comply, Friends of the Earth sent an a letter to the relevant state authority about Kosit's refusal to comply with the law together with a request for a fine to the Director of Kosit, G. Giunta, and a ban of his activities for 2 years.

Alternative proposals and recommendations of Friends of the Earth

Since 1997 Friends of the Earth has worked to eliminate POPs – PCDD/F production from the Košice Municipal Waste Incinerator and has made the following proposals and recommendations:

A) In the correspondence with the strategy "Heading towards Zero Waste" Friends of the Earth proposed donating the majority of resources gained by the fees for waste disposal from citizens on prevention development, and reuse of products along with separated waste collection, recycling and composting. In addition, the proposal suggested applying a mechanical-biological treatment on the residual waste.

B) To eliminate PCDD/F production to the lowest possible level within appropriate economical costs.

C) To realize economical-environmental analyses comparing 2 variants of municipal waste handling in Košice; the incineration variant (incineration reconstruction and low level of recycling) and the recycling variant (focused on intensive development of the waste prevention, recycling, composting and mechanical-biological treatment of the residues."

Experience and economic analysis indicates that incinerator reconstruction path cannot be justified. It would be too expensive, creating a pressure for a constant supply of a great amount of waste for the incinerator, which would interfere in the development of separated waste collection, recycling, and composting. A more realistic and effective path to eliminate PCDD/F production lies in developing cleaner alternatives and focusing on waste prevention, separation, recycling, and composting.

PCDD / F from the Košice municipal waste incinerator in the environment and human population

Measurements from the Košice Municipal Waste Incinerator showed high emissions of dioxins. Levels were 69 - 80 times higher than the limit allowed in EU (0.1ng TEQ/m^3).

Another dispersion study showed that in the case that an incinerator emits 2ng TEQ/m^3 PCDD (and more), substances dispersed widely around the incinerator and gradually contaminated maternal and cow milk, sheep and fish fat, meadow vegetation and water plankton and in some places at significant levels. These impacts have not been noticed with emissions lower than 0.1ng TEQ/m^3. [4]

PCDD/F Emissions from the MWI incinerator in Košice – 1992 [23]

Location and specification of the waste incinerator	**dedicated to burn**	PCDD	PCDF	PCDD + PCDF	**Concentrations * PCDD+ PCDF I-TEQ (ng.m3)****	**EU Limit valid in Slovak Republic for existing waste incinerators since Jan-01- 2007 - for new sources since Dec - 31-2001)**
Košice, cylinder grate kiln, electrostatic precipitator	Municipal solid waste	840	1950	2800	**33**	**0,1 ng TEQ/m3**

Emissions of PCDD/F from MWI In Košice – 1994 [24]

Source: Správa z merania a vyhodnotenia hmotnostnej koncentrácie emisie PCDD, PCDF a PCB zo spaľovne odpadov CZO s.r.o. v Košiciach (1994)	
. **PCDD/ F in** I-TEQ :	sample1 **6,95 ng TEQ/m3,**
	sample 2 **8,07 ng TEQ/m3.**

PCDD/Fs levels in outdoor air in Slovak Republic[25]

Levels in I-TEQ pg.m^{-3} (calculated from measured levels of 2,3,7,8-substituted PCDD and PCDF congeners) and concentrátions (in pg.m^{-3}) of total **PCDD/PCDF** (in italic) levels measured **in outdoor air** sampled in the period Oct 1996 - July 1997.					
Location	16 KE I	17 KE II	18 KE III	19 KE IV	20 KE V
Oct. 96	0,09 *3,71*	0,20 *11,20*	0,09 *3,07*	0,06 *1,48*	**0,31** *10,0*
Nov. 96	0,23 *10,78*	0,17 *7,90*	0,19 *5,97*	0,06 *2,67*	0,17 *6,29*
Jan. 97	**0,69** *29,46*	0,24 *13,22*	**0,44** *18,32*	0,19 *8,57*	0,11 *4,51*
Feb. 97	0,09 *3,44*	0,13 *4,60*	0,08 *3,05*	0,04 *1,39*	0,18 *7,42*
Apr. 97	0,15 *4,30*	0,13 *2,53*	0,05 *1,31*	0,06 *1,31*	0,09 *2,51*
May 97	0,03 *1,0*	0,16 *4,78*	0,04 *1,19*	0,03 *1,05*	0,06 *1,85*
Jun 97	0,06 *2,57*	0,11 *6,82*	0,05 *2,30*	0,04 *1,19*	0,05 *2,29*
Jul 97	0,05 *1,49*	0,05 *1,42*	0,03 *1,03*	0,03 *0,88*	0,15 *4,98*
Geom. Mean	0,11 *4,01*	0,14 *5,31*	0,08 *2,80*	0,05 *1,69*	0,12 *4,67*

Location 16 – Košice I – Štúrova street– 8 samples
Location 17 - Košice II – Galaktická street – 8 samples
Location 18 – Košice III – Strojárska street – 8 samples
Location 19 – Košice IV – Ďumbierska street – 8 samples
Location 20 – Košice V – Veľká Ida – 8 samples

All PCDD/F concentrations measured in outer atmosphere were higher than the limit recommended by the Czech Republic (CR) 20fg I-TEQm^{-3}. Some of them were even higher than an indication level of the WHO of 0.1 pg(m^{-3}) (for clarity we have tinged them by a grey background) and in some cases they were higher than 0.3 pg I-TEQ/m^{3} (these, we have marked out by underlining on a grey background). The value recommended in the Czech Republic for an outdoor air is 20fg I-TEQm^{-3} (ÚPKM Bratislava, MŽP ČR, Petrlík 2001).

PCDD/F in breast milk in citizens from villages south of Košice.

PCDD/F in breast milk samples, WHO field study (CVUA Freiburg)

Results in ng/kg fat
Datei: tabellen\WHOFeldstudie2000\PCDDF results
Stand: 18.07.2001

	fat (%)	I-TEQ 1988	WHO-TEQ 1997	PCB-TEQ 1997	sum TEQ PCDD/F+PCB	2,3,7,8-TCDD
Svidník	4,7	8,36	9,53	12,69	22,22	0,93
Nitra	2,7	7,52	8,61	10,72	19,33	0,68
Michalovce	4,1	9,04	9,87	19,49	29,36	0,68
Košice	**4,1**	**7,04**	**7,84**	**12,50**	**20,34**	**0,68**

This sample was taken and analysed in 2001. The mixed (average) sample of the maternal milk rendered by 10 women living in the villages southwards of Košice was analysed. The results showed that the values fluctuated on the level observed in other Slovak districts. We may assume that till now the PCDD/F emissions did not show in increased levels of dioxins in inhabitants' tissues. But it is necessary to realise that the result was based only on the mixed sample given by a small number of women. During the sampling, it was found that the majority of the women consumed food of animal origin bought in the shop. Almost none of them consume it from domestic or local breeding plants and animals. The dioxins, by 90-95% get into a human organism by food - mainly of animal origin.

Since then, no new measurement of PCDD/F in the Košice MWI has been realised. Kosit a.s. plans to conduct PCDD/F – POPs' measurements after finishing the reconstruction sometime in 2005.

Priatelia Zeme – SPZ
(to 2 – 2005 used name Spoločnosť priateľov Zeme)

post. address: P.O. Box H 39, 040 01 Košice
office. Alžbetina 53, Košice
Slovakia
Tel.fax: 00421 55 6771677
e-mail: spz@spz.sk
www.prateliazeme.sk/spz

Ladislav Hegyi 11 / 2004 – 2 – 2005