

Waste Management

- **Prevention and minimization and environmentally sound management of hazardous wastes**

- *Policy measures for the prevention and minimization of hazardous wastes*

As a result of identified problems arising from a waste management status analysis and causes of the current state of waste management, Croatian regional authorities together with the Ministry of Environmental Protection, Physical Planning and Construction (MEPPPC) proposed a multi-year plan of action (2007-2015), with the ultimate goal of creating a self-sustainable waste management system in Croatia.

In this respect, the Waste Management Plan of the Republic of Croatia (OG 85/07) represents the legislative basis for waste management in Croatia for the period 2007-2015. Within the framework for preparing of the Plan is included the Waste Management Strategy of the Republic of Croatia (OG 130/05), existing legislation and EU guidelines.

The Strategy regulates the management of different types of waste in Croatia including from their generation to final disposal, with the underlying objective to establish an integrated waste management system organized in accordance with current European requirements and standards.

The Legislative framework for waste management in Croatia comprises the Waste Act (OG 174/04, 111/06, 60/08 and 87/09) and by-laws that are focused on special categories of waste.

- *Initiatives to treat, recycle, reuse and dispose of wastes at the source of generation and regulatory mechanisms (Polluter-pays principle)*

In Croatia separate collection systems have been set up for special categories of waste (batteries and accumulators, WEEE, end-of-life-vehicles, waste oils and some categories of non-hazardous waste). All these systems follow adhere to the following scheme:

The producer/importer of a product that is going to become future waste pays a fee to the Environmental Protection and Energy Efficiency Fund (EPEEF). Revenues raised in this manner, are used for improving the collection system of special types of waste and also for promoting more efficient treatment and recovery. A waste collection service in cases where the fee has been paid is completely free for the waste holders such as households. In the case of end-of-life-vehicles, holders shall be entitled to compensation for delivering their old vehicles to collection points provided the vehicle is delivered as a whole.

There are additional initiatives to treat and/or recover all waste that can be treated and/or recovered in Croatia, and to export only waste that we cannot treat and/or recover because of the lack of technology. For example, lead plates from waste accumulators cannot be melted in Croatia because we possess no lead melting plant. The other parts of the accumulator are recovered, but lead plates are exported.

- ***Recovery, reuse and recycling of hazardous wastes and their transformation into useful material***

Given that Croatia is a relatively small country with a corresponding sized market, it does not possess numerous facilities for recovery, reuse and recycling of hazardous waste due to insufficient waste for worthwhile recycled production. Furthermore, the import of hazardous waste has been prohibited by Croatia for a long time.

Recent amendments to the Waste Act were adopted in June 2009, which enabled the import of useful hazardous waste that could be recovered in Croatia.

Establishing some new modern recovery facilities as is the one for WEEE recovery, enabled new collection systems to become more efficient. Furthermore, a lot of work has been done on raising public awareness and introducing new systems so Croatia expects better results in waste recovery in the near future.

- ***Phase-out of toxic, persistent and bio-accumulative waste***

The Republic of Croatia does not experience a significant problem with toxic, persistent and bio-accumulative waste. The only waste of this kind Croatia is having to deal with in noticeable quantities is waste containing PCBs. According to an expert study on PCB inventory that was completed in spring 2009, 530,85 tonnes of equipment were identified in Croatia which contained PCBs, owned by 73 holders. The same study estimates that the total amount of PCB containing equipment in Croatia could amount to 653,74 tonnes.

PCB waste management is regulated by the Ordinance on PCB and PCT Management (OG 105/08). According to the Ordinance, all holders of PCBs and PCB containing equipment are obliged to report their quantity to the MEPPPC and to the Croatian Environment Agency (CEA) by March 2009, six months following the adoption of the Ordinance. By the end of September 2009, holders are obliged to submit their plans for decontamination of such equipment to the MEPPPC and CEA. Furthermore, holders are obliged to ensure decontamination of PCB containing equipment before the end of 2010.

- ***Environmentally sound waste disposal and treatment***

In order to undertake activities related to the disposal/recovery of hazardous waste it is necessary to obtain a permit issued by the MEPPPC, pursuant to Article 41 of the Waste Act. This is also necessary for the activities related to hazardous waste collection and storage.

In Croatia, the method of disposal/treatment of hazardous waste is determined on the basis of permits issued and is carried out in one of the following ways:

- a) incineration/co-incineration,
- b) conditioning by incorporation into brick products,
- c) solvent regeneration, neutralisation of acids and bases,
- d) solidification and stabilisation,
- e) sterilisation/disinfection,

f) electrolysis and dilution.

Permits for the treatment of special categories of waste that are subject to specific ordinances are issued according to specified criteria respectively.

Given there are no landfills designated for hazardous waste in Croatia and possibilities for the recovery of its energy or incineration are limited, most of Croatia's hazardous waste intended for disposal is exported to other countries,

- ***Inventories of hazardous waste production, their treatment/disposal, and contaminated sites***

The Croatian Environment Agency (CEA) was established by the Government as an independent public institution to collect, integrate, and process environmental data.

In the field of waste management, the CEA is responsible for providing reliable and comparable data, as well as information on waste, to decision-makers and the general public. Their main tasks are as follows:

- collect and collate data on waste pursuant to the Waste Act and relevant by-laws
- maintain the waste information system
- prepare and elaborate indicators on waste
- prepare reports on waste and waste management
 - participate in the European Information and Observation Network EIONET
- collaborate in the preparation and implementation of projects in the field of waste
- improves the quality, quantity, availability and comparability of waste data

A legal or natural person i.e. craftsmen who produce and/or manage waste must keep the requisite register on waste origin and waste flow. They are obliged to enter data into the register in an accurate and comprehensive manner, and subsequent to every change. In accordance with the normative framework, they shall submit on an annual basis the data from the register to the competent authority. The competent authorities then submit this data to the CEA that maintains an official register and issues an annual report. This report includes data on the quantity and type (according to key numbers from the European list) of produced, treated, and disposed waste.

A specific report is prepared for the transboundary movement of waste.

Contaminated sites, so called "hot spots", are registered and described in the Waste Management Plan of the Republic of Croatia for the period 2007-2015. The 2006 PHARE project: "Development of Hazardous Waste Management System Including the Identification and Management of Hot Spot Sites in Croatia", was initiated in December 2008, and is still being implemented. Its main objective is to identify and recommend appropriate solutions for the remediation of hot spots.

- ***Establishment of combined treatment/disposal facilities for hazardous wastes in small- and medium-sized industries***

Technical and technological capacities for the collection, storage and treatment of hazardous waste are being developed in accordance with supply and demand in the market. Certain economic entities have been issued with permits for collecting,

transporting and temporarily storing hazardous waste. In addition, there are several smaller specialised facilities in Croatia built for the purpose of recovery/treatment of hazardous waste and there are available capacities within individual industrial installations which are used for recovery/treatment of some types of hazardous waste.

- *Dissemination of scientific and technical information dealing with various health and environmental aspects of hazardous wastes*

Environmental Health Department of the Croatian National Institute of Public Health holds health education and promotion activities on managing medical waste and from time to time disseminates information on various health and environmental aspects of hazardous wastes. Information's are published on the web: www.zdravlje.hr, www.hzjz.hr, www.hcjz.hr and in brochures and leaflets that are sheared as educational materials for the TV and radio.

- *Preventing illegal international traffic in hazardous wastes*

Croatia's decision-making process and regulatory framework overseeing the export and transit of hazardous waste have been fully aligned with Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal. Croatia ratified the Basel Convention in 1994, which calls for close cooperation with competent authorities of those states to which hazardous waste is exported or with transit countries.

Alongside, the Basel Convention, the prevention and detection of illegal transboundary movement of waste is ensured via implementation of the Waste Act and the Regulation on Supervision of Transboundary Movement of Waste (OG 69/06, 17/07 and 39/09). Pursuant to these provisions, inspections are conducted at border crossings and on the premises of customs houses, in a manner that makes optimal use of competent capacities to hand, using the urgent procedures in sanctioning offenders at Magistrates courts

Regular and ad hoc inspections of transboundary movement of waste are being conducted. Notifications for inspection are sent to very small targeted group of customs officials at the very last minute and as close to the actual time the inspection, so as to achieve ensure an element of surprise and the ultimate success of the exercise.

Within the ambit of environmental inspections, Croatian officials also cooperate on bilateral and multilateral manner via participation in activities within the IMPEL TFS cluster.

- **Environmentally sound management of solid (non-hazardous) wastes and sewage, in the context of integrated planning and management of land resources**

- *Policies aimed at waste prevention and minimization, reuse and recycling*

As part of its accession process, to the EU, Croatia was incorporate relevant EU legislation that provided the basis for newly enacted legislation including several ordinances dealing with different categories of waste. According to these ordinances new

collection systems for special categories of waste were set established, as well as waste treatment and recovery were enhanced.

Separate collection and recovery services are organized through concessions.

The main aim is to reduce the amount of waste that ultimately ends up in landfills by establishing separate collection systems and to recover as much waste as possible. The collection and recovery systems are established on the country level.

To date, Croatia has achieved very good results with separate collection and recovery services, especially with PET packaging and used tyres - all collected quantities of these types of waste have been recovered in Croatia.

- *Development of environmentally sound disposal facilities, including technology to convert waste into energy, such as, for example, through utilization of landfill methane*

At the moment no such facilities exist in Croatia. According to the Waste Management Plan in the Republic of Croatia for the period from 2007-2015, 17-21 waste management centres (WMC) are envisaged to be built with mechanical-biological treatment (MBT) facilities that will produce methane and refuse-derived fuel (RDF).

However, current forecasts indicate that construction and initial operation of all these WMCs will not be achievable by 2015 due to financial reasons. Consequently, the new target date has been set for 2020.

- **Radioactive wastes and their environmentally sound management (safe storage, transportation and disposal of radioactive waste)**

In Croatia, radioactive waste is regulated by the Regulation on the Conditions and Methods of Disposal of Radioactive Waste, Spent Sealed Radioactive Sources and Ionising Radiation Sources which are not Intended for Further Use” (OG 44/2008). This regulation does not apply to nuclear material defined in the Nuclear Safety Act (OG 173/2003), originating from nuclear installations.

The State Office for Radiation Protection (SORP) authorises activities involving radioactive waste, spent sealed radioactive sources and ionising radiation sources, which are not intended for further use. Permits are awarded to legal entities or individuals on the basis that the SORP is satisfied of full adherence to prescribed requirement under the Act on Ionising Radiation Protection and Safety of Ionising Radiation Sources (OG 64/2006), Regulation (OG 44/2008), and provisions of special regulations in the field of ionising radiation protection.

The Rudjer Boskovic Institute Repository is licensed to undertake collection and storage, including the final accommodation of low level and intermediate level of radioactive waste.