

We borrow from nature





Sustainable development

Policy and organization of nature and environmental protection function

Basic indicators

Major achievements in 2008 (by HEP Group companies)

■ Policy and organization of nature and environmental protection function

HEP continuously monitors and analyzes the impact of its business processes on the environment. The company reports on all environmental components timely and objectively to relevant institutions, units of local self-government and the interested public. Employees working in nature and environmental protection function attend seminars and workshops to get informed about duties and activities arising from environmental and nature protection legislation. Technical support to these employees that are active in individual HEP Group companies is provided by the members of HEP's Team for Environmental Protection Coordination and Standardization. During the year, HEP's representatives participated in seminars, workshops and conferences relating to the implementation of the Kyoto Protocol, waste management, hazardous substances management, and water protection.

Harmonization with the EU legislation

In 2008, the thermal power plants Sisak and Plomin participated in the EU project CARDS 2004: „Support for the Further Approximation of Croatian Legislation with the Environmental Acquis – preparation of IPPC/ environmental pilot permit, whose endorser was the Ministry of Environmental Protection, Physical Planning and Construction. The purpose of the project was to gain, through the environmental pilot permit, an insight into and experience with the process of obtaining integrated environmental requirements which all HEP's thermal power plants exceeding a gross thermal capacity of 50 MW would have to obtain for further operation. All new plants and those that will undergo major reconstruction will also have to obtain integrated environmental requirements.

■ Basic indicators

According to water quality analyses carried out during 2008 by authorized laboratories as required by water laws and regulations, all HEP's plants operated in accordance with permits and legal requirements. In 2008 HEP continued to monitor air emissions of pollutants -sulfur dioxide (SO₂), nitrogen oxide (NO_x), carbon dioxide (CO₂) and particulates as required by air quality legislation, as well as the quantities of hazardous and non-hazardous waste generated by HEP.

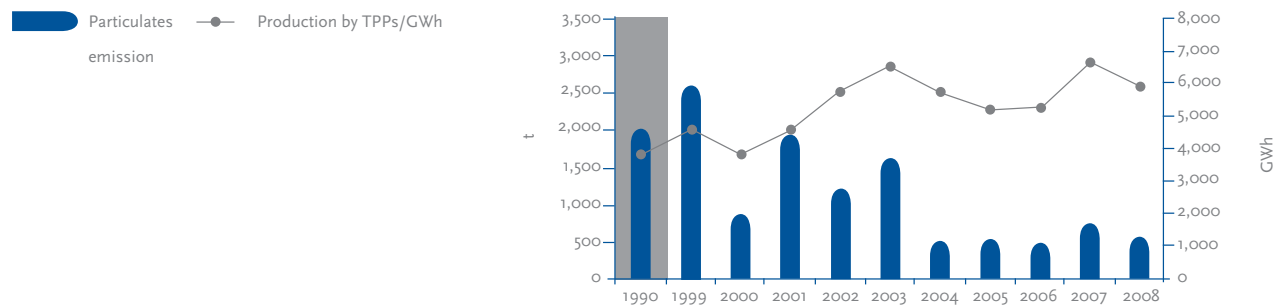
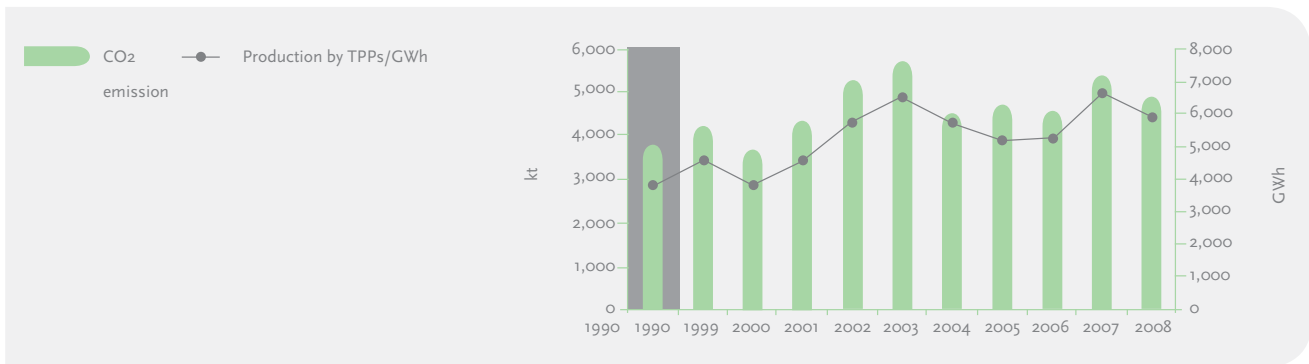
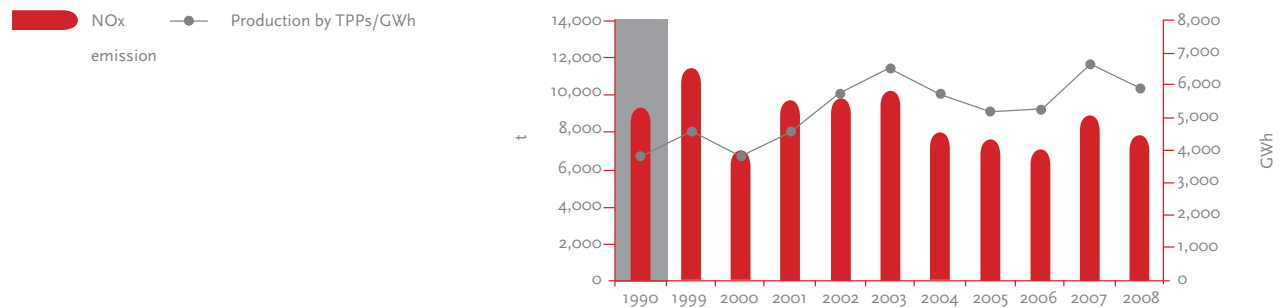
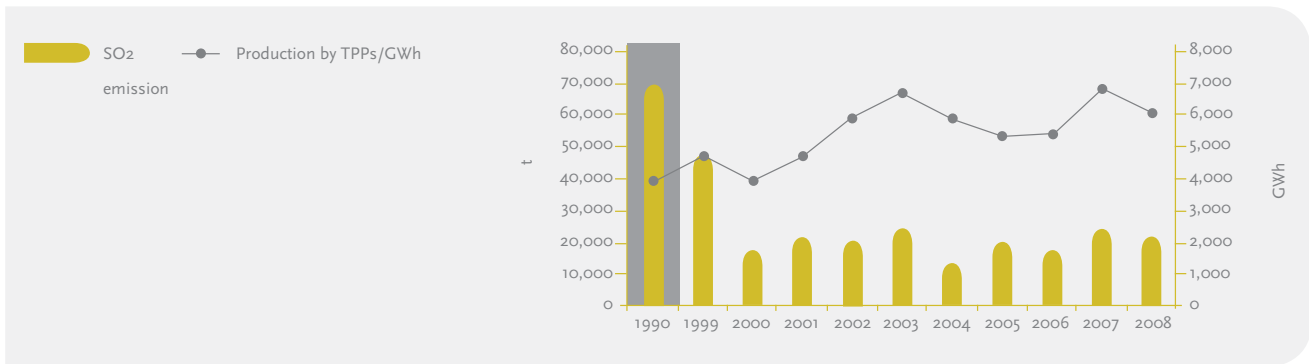
Air emissions

In 2008 HEP's thermal power plants produced less electricity than in 2007. As a result, emissions of all air pollutants decreased.

Air pollutant emissions from HEP's thermal power plants (1990) 1998-2008

year	SO ₂ (t)	NO _x (t)	CO ₂ (kt)	particulates (t)	Production by TPPs (GWh)
1990	69,402	9,248	3,750	2,031	4,030
1999	47,092	11,506	4,195	2,610	4,768
2000	17,343	7,067	3,654	885	3,958
2001	21,807	9,733	4,347	1,939	4,713
2002	20,147	9,780	5,259	1,215	5,899
2003	24,635	10,303	5,679	1,634	6,703
2004	13,723	7,900	4,503	518	5,899
2005	20,167	7,564	4,694	548	5,387
2006	17,664	7,044	4,544	504	5,436
2007	24,376	8,879	5,383	756	6,845
2008	22,165	7,834	4,862	566	6,075
2008/2007 (%)	-9.07	-11.78	-9.69	-25.08	-11.26

Trend of pollutant emissions from HEP's thermal power plants (1990-1998-2008)



Waste

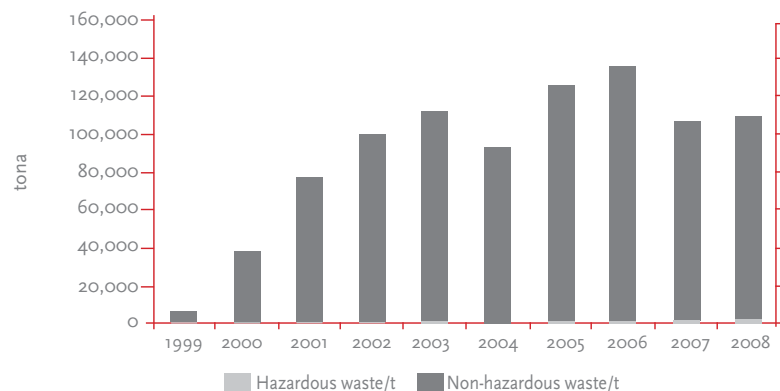
Over the last four years HEP's waste management system has significantly improved. Most plants have either completed or begun construction of temporary disposal facilities for waste and secondary raw material and equipped them with tanks for separate waste collection.

In 2008 HEP's plants generated 1,243 tons of hazardous and 107,623 tons of non-hazardous waste. The waste was delivered to authorized collectors and processors for further processing.

Total waste quantity 1999-2008

Year	Hazardous waste (t)	Non-hazardous waste (t)
1999	479	5,670
2000	490	37,531
2001	518	76,717
2002	577	98,492
2003	1,148	111,292
2004	940	92,067
2005	1,209	124,820
2006	1,112	134,336
2007	1,269	105,569
2008	1,243	107,623
Change 2008/ 2007 (%)	-2	+2

Total waste quantity 1999-2008



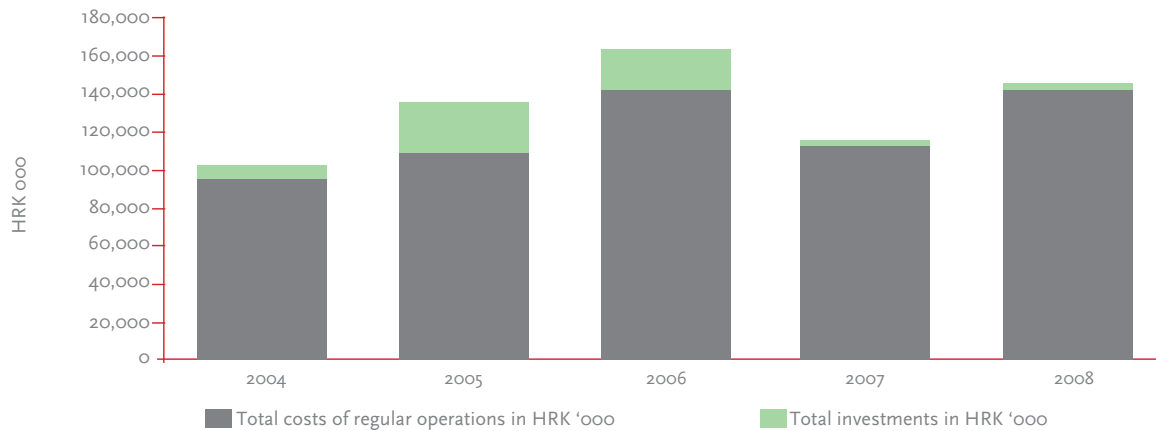
Expenses for nature and environmental protection

Since the beginning of the implementation of Accounting for Nature and Environmental Protection Expenses project (RETZOK) in 2004 until early 2008, HEP Group invested 56.25 million kuna in total in the protection of nature and the environment while total costs of regular activities to protect nature and the environment were 599.06 million kuna. Total expenses for nature and environmental protection in 2008 were 144.05 million kuna. The most significant investments in 2008 were made to improve the waste management system in HEP's plants, protection of nature and the environment and radiation protection.

Expenses for nature and environmental protection in 2008

Environmental area	Costs of regular operations (HRK'ooo)	Investments (HRK'ooo)
air and climate	3,237	580
waste water	3,461	0
waste	14,928	469
soil and groundwater protection	613	92
noise and vibrations	35	0
nature and landscape protection	25,727	939
radiation protection	71	107
research and development	667	2
other (mostly fees)	93,113	4
TOTAL	141,853	2,195

Total expenses for nature and environmental protection 2004-2008



Major achievements in 2008 (by HEP Group companies)

There are as many as three companies within HEP Group whose primary activities are in the areas of environmental protection and sustainable development: HEP-ESCO d.o.o., a company which develops energy efficiency projects, HEP-Obnovljivi izvori energije d.o.o. which deals with preparation, construction and use of renewable energy sources, and APO d.o.o. a company specializing in environmental protection services, especially management of hazardous and radioactive waste. The achievements of these companies in 2008 are described in the section Reports by other HEP Group companies. This section gives an overview of achievements in companies which carry out core electricity activities.

Achievements by HEP Proizvodnja d.o.o.

Thermal power plants

- All thermal power plants during 2006 began to implement the modernization of the air pollutant emission monitoring system and to adapt the system for continuous emission measurement (CEM) in order to link it with the information system of the Environmental Protection Agency.
- In TE-TO Zagreb, a device for control of oil of the heating condensate of fuel oil heater was put into operation. The pure condensate is used as makeup for the hot water system for district heating, and in case condensate is oiled, it is transferred to the oily waste water treatment system. In one of the two columns of the pumping station of cooling water from the Sava river, the screen was replaced with a sieve, and the screen in the other column is planned to be replaced as well. During the year the temporary storage facility for hazardous and non-hazardous waste was rehabilitated as well as chemicals storage facility.
- U EL-TO Zagreb the sewage system was rehabilitated, an additional separator was installed for separation of oily waters, and the open-cycle cooling water system was changed to the close-cycle system. A new water treatment plant was built thanks to which consumption of chemicals and quantity of hazardous waste will be reduced. With the aim of reducing air pollutant emissions, burners on high-pressure boilers were replaced and preparations were carried out for installation of burners in the new hot water boiler.
- In Sisak TPP, video cameras were installed and put in operation shooting smoke of the chimney of Units A and B, a reserve device for measurement of NO_x, SO₂ and CO was procured, and procurement of a spare device for measurement of particulates is currently underway as well as a device for measurement of mass flow of flue gases for all boilers. Sisak TPP as a member of the Forum of the city of Sisak and Sisak-Moslavina County, participated in the adoption of the environmental protection program of the City and the County.
- In TE-TO Osijek, a device for continuous measurement of flue gases flow was installed as part CEM system of a 45 MW unit.

Hydro power plants

- In Dubrava HPP, the system of waste water drainage was improved by installing new oil separators for receiving of process water. An oil detector was installed at points where seepage water accumulates and currently underway is the preparation of design documentation for the construction of protective floating dams at the end of the tailrace channel.
- In Varaždin HPP, a temporary sediment storage area was improved, and a new trash rack rake was procured.
- In order to solve the problem of eutrophication of the Varaždin HPP storage lake caused by accumulation of nutrients and relatively low depth of the lake which results in excessive growth of water plants which hinder water flow and thus jeopardize nearby populated areas and the structures of the hydro power plant, a project is being developed to remove sediments from the lake and dispose of and manage the sediments on-site.
- In Senj and Sklope hydro power plants, a temporary hazardous waste storage was arranged and equipped with tanks for separate waste collection. For Grabovu operation, devices for biological treatment of sanitary waste water were procured as well as oil and grease separator.
- In order to prevent oil to leak from the pipe of the hydraulic crane that is used to remove sediments on the Bukovnik dam, a spill containment was placed.

Achievements by HEP OPS

- An Environmental Protection Working Group was set up, allowing Company-wide improvements in this business area.
- The Commission for handling of the gas sulfur-hexafluoride (SF₆) continued its activities relating to the obligations under the Regulation on Greenhouse Gases Emission Monitoring and Establishment of a National Greenhouse Emission Register.
- In the Zagreb Transmission Area, the environmental management system ISO 14001:2004 was introduced.
- In the Osijek Transmission Area, in the location of TS 400/110 kV Ernestinovo, oil drainage and oil sewage were rehabilitated.

Achievements by HEP ODS

- In Elektra Sisak, a temporary non-hazardous waste storage was built.
- In Elektroprimorje Rijeka, temporary storages of hazardous and non-hazardous waste in the location of the car repair shop were built. In Skrad, Elektroprimorje Rijeka, the system for waste water drainage was reconstructed.