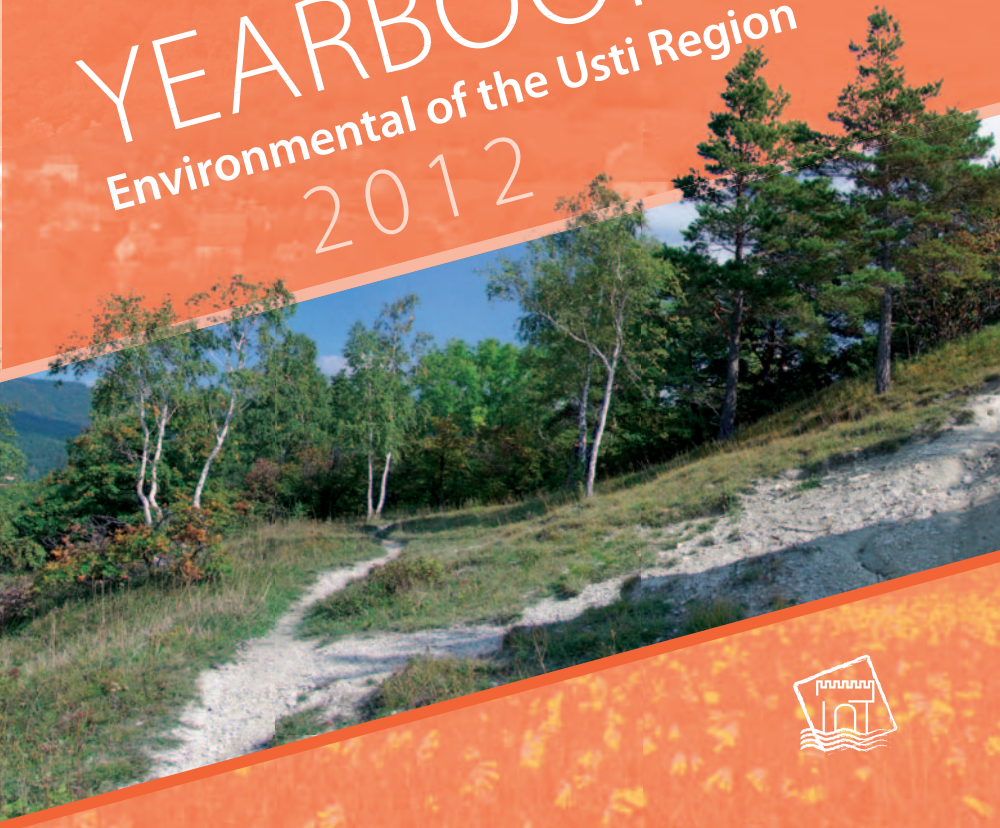


YEARBOOK

Environmental of the Ústí Region

2012



Basic information about the region

The Ústí Region spreads on the area of 5 335 km². Agricultural land covers almost 52 % of the area, forests 30 %, and 2 % go to water bodies. Population density in the Region (157 inhabitants per km²) exceeds the national average so that the Ústí Region ranks the fifth most populated region in the Czech Republic after its capital Prague, Central Bohemian, Moravian-Silesian, and South Moravian Region. Characteristic feature of the Region is its relatively young population – the average age is 40 years.

The Ústí Region ranks fourth after the Central Bohemian, the capital of Prague and South Moravian Region in number of born children, but it shows one of the highest mortality rates in the republic.

Registered unemployment rate in the Ústí Region belongs to the highest together with Karlovy Vary and Moravian-Silesian Region.



Water management

Next to the Labe River important watercourses of the Ústí Region are its left-bank tributaries: the Ohře and Bílina River, and right-bank tributaries: the Ploučnice and Kamenice River.

From hydrologic balance point of view the year 2012 in the territory of the Region was considered standard. In mid-February, ice masses movement and slush-ice jam formation resulted in the watercourse spill at Klášterec nad Ohří on the Ohře River. At the same time there was also a flood episode caused by slush-ice jam on the Mandava River. Snow cover thaw together with precipitation caused minor spills mainly in territories of municipalities with extended competencies: Kadaň, Litvínov, Litoměřice and Varnsdorf. Navigation on the Lower Labe River was discontinued from 4th to 19th February due to occurrence of ice phenomena. The inhabitants were not directly endangered by these episodes and the floods did not cause major damage to either public or private property.

In 2012, construction works on flood-control measures in Lovosice area, Bohušovice nad Ohří, Děčín – left and right bank, Ústí nad Labem – left bank, and Štětí – Hněvice – Počeplice were carried out.

Intakes of surface water viewed in the long-term have slightly decreasing trend. Groundwater intakes, on the contrary, have

shown a slight rise in recent years. In total, the intakes of both surface and groundwater in the Region dropped by 17.6 mil. m³ last year, which means the decrease by 8.3 % compared to previous year.

Similarly to the intakes, total amount of discharged wastewater dropped in year-to-year comparison by 2 mil. m³ which means the total decrease by 0.1 %. The biggest share in discharged wastewater takes process wastewater discharged either to sewerage system or to surface water bodies. In 2012 we saw a slight increase by 710 thousand m³ compared to 2011, but in a longer term gradual decrease in the amount of discharged process wastewater is evident.

In 2012, the share of inhabitants connected to public water supply and sewerage system decreased minutely compared to 2011. The share of population supplied from public water supply system decreased by 0.3 %, and that of people living in houses connected to sewerage system decreased by 1.9 %. Invoiced water-rate in the Region was 1 408 mil. CZK/year, and sewerage charge amounted to 1 151 mil. CZK/year. Average price of water in the Region is the highest one in the CR (37.4 CZK/m³), sewerage charge is the second highest in the CR (38.5 CZK/m³); even higher average price for discharged wastewater was noticed only in the Liberec Region.

The most polluted river in the Region in the long term is the Bílina River. Its pollution

is closely related to the history of the Region the river flows through (coal mining in Most area, contaminated Mračný stream emptying into it, chemical industry). In the past, in fact, the whole flow capacity of the river was used as process water in chemical plant at Litvínov. Gradually, the situation is improving year to year, the river bed is getting cleaner and life is coming back to the Bílina River. Water quality in the Bílina River is in a simplified way expressed by quality class IV (highly polluted water) except for the part between Most and Trmice which is classified as extremely high-polluted water (quality class V). Water quality in the Labe River in the Region falls into quality class III (polluted water) and the Ohře River is rated as class I (very clean water) and II (clean water).

From viewpoint of percentage share of nonconforming values of all analyzed indicators it can be stated that in partial river basin of the Ohře River, Lower Labe and other Labe River tributaries relatively low percentage of nonconforming analysis was recorded for nitrates and ammonium ions; concentrations of sulphates, fluorides and even nitrites, however, were the highest ones in the CR. Increased concentrations of sulphates contribute to total mineralisation of groundwater in the region. In year-to-year comparison the groundwater quality has not changed considerably.

27 accidents of common type without long-term consequences were registered in 2012.



Air quality and power generation, geological environment

Air Quality

Since 1.9.2012 Act No. 201/2012 Coll. on ambient air protection has been in force.

It overrules previous act from 2002, i.e. Act No. 86/2002 Coll. Main reasons for adopting the new law include stagnating progress in emission combat and air quality improvement and even worsening emission balance in some sectors (e.g. transport). Analysis showed that instruments available in the previous

air quality protection law (Act No. 86/2002 Col.) are insufficient and ineffective and do not lead to meeting objectives stipulated by current legal regulations (both Czech and European). The new law assures links between emission and ambient air quality concept of air quality protection, which means that conditions for air pollution sources (emissions) have always to be set with regard to the impact of their operation on the air quality (ambient air quality) which then affects impacts on receptors (impact on human health and ecosys-

tems). The new air protection act has currently four implementing regulations.

In 2012, no more significant differences in emissions of basic pollutants from selected stationary sources of air pollution were recorded as compared with previous period. So called ecologisation of sources, i.e. gradual modernisation and reconstruction of existing coal-fired power generating units in order to meet stricter emission limits went on at combustion sources included into the national emission reduction programme related to the new industrial emissions directive (Directive 2010/78/EU of the European Parliament and of the Council on industrial emissions).

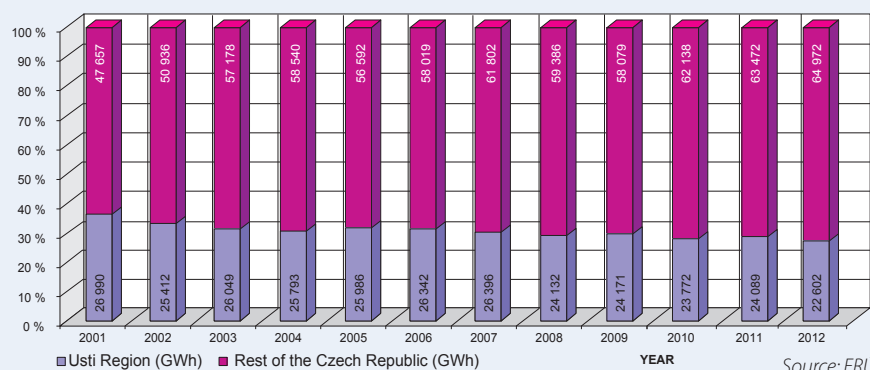
Air quality in the Region is assessed based on data obtained from automated monitoring stations included into the Air Quality Information System (ISKO) operated by the Czech Hydrometeorological Institute (CHMI) under the authority of the Ministry of the Environment. There were in total 30 automated monitoring stations operated in the Ústí Region territory in 2012.

In 2012, 24-hour concentrations of PM10 were exceeded at 7 stations, annual average concentrations of benzo(a)pyrene at 2 stations and maximum 8-hour average of ground-level ozone (O₃) at 1 monitoring station. All other air quality limits were not exceeded at any monitoring station located in the Ústí Region.

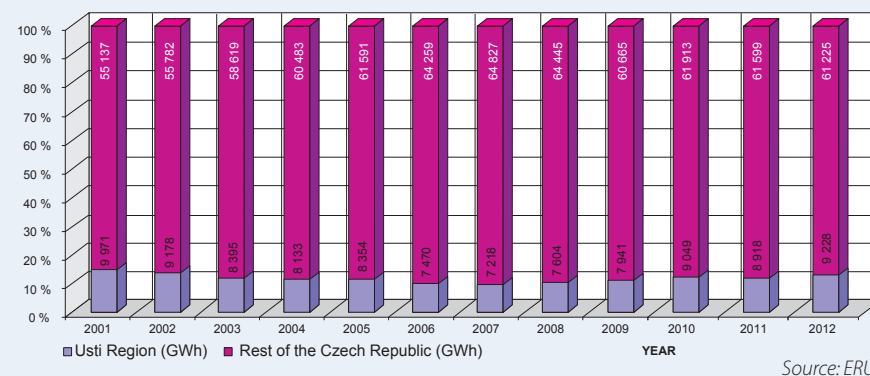
Data from monitoring stations are further processed and used for calculation of percentage of area within a zone or agglomeration where ambient air quality limit for one or more pollutants was exceeded. The area where ambient air quality limit for particulate matter PM10 -24 hour average was exceeded decreased considerably in year-to-year comparison. It was mainly due to meteorological conditions in winter months (less frequent occurrence of inversion episodes with unfavourable dispersion conditions).

In 2012, monitoring of persistent organic pollutants' concentrations (POP_s) in the air in the Ústí Region continued in following localities: Ústí nad Labem (Trmice, incineration plant), Teplice, Most, Chomutov, and Ústí nad Labem (Kočkov). Selected localities are included in the national monitoring network MONET.

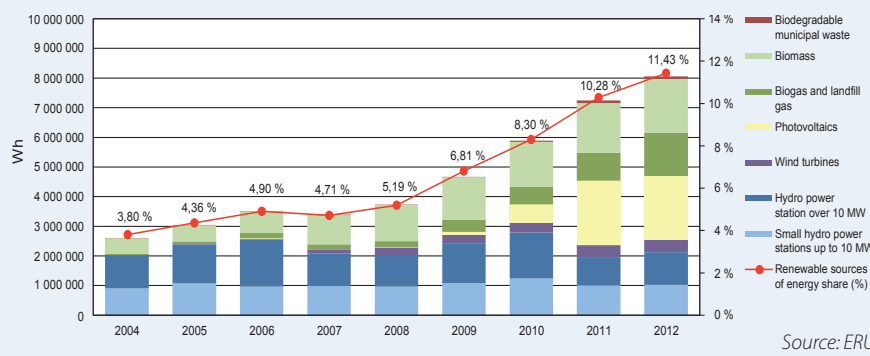
Share of electricity generation in the Power Generation System of the Usti Region and the CR (gross)



Share of electricity consumption in the Power Generation System of the Usti Region and the CR (gross)



Development of electricity generation from renewable sources of energy and its share in the gross domestic consumption in the CR



Power Generation

The Ústí Region takes leading position in power generation and this fact can also be envisaged in future. There are power stations of national significance operated in the Region (Prunéřov Power Stations, Tušimice and Ledvice Power Station – operator: ČEZ, a.s.; Počerady Power Station – operator: Počerady, a.s. Power Station). The source of energy is mainly brown coal incineration. In 2012, almost 26 % of total amount of electricity (gross) genera-

ted in the Czech Republic was generated in the Ústí Region.

Power generation from renewable sources in the Czech Republic shows a slight rise. Output of hydro, wind and solar power stations in the Ústí Region in 2012 did not change considerably compared to 2011 (slight decrease in hydro and wind power stations' output and a slight rise of energy generation from solar power stations). At solar power stations we could see the end-time of sudden increase in power generation from facilities that were put into

operation in the period of 2009 – 2011. Wind turbines in the Ústí Region keep accounting for considerable share of the national power generation from these sources (almost 43 %).

The most significant increase in power generation from renewable sources can be seen at plants fired on biogas, which was caused by putting new biogas stations into operation.

Geological Environment

Significant deposits of energy, metallic and non-metallic as well as construction

raw materials can be found in the Ústí Region territory. The Ústí Region is the principal producer of brown coal, production of which exceeded 80 % of the CR total in 2012. In the Most Basin brown coal is excavated by Severočeské doly a.s. (North Bohemian Mines) and the Czech Coal Group with its companies Litvínovská uhelná a.s. and Vršanská uhelná a.s. Extraction of mineral resources is closely related to soil reclamation and revitalisation issues.



Nature conservation, environmental education, training and public awareness

Nature Conservation

There are 1 national park, 4 protected landscape areas, 12 national nature reserves, 13 national natural monuments, 56 nature reserves, and 83 natural monuments in the Ústí Region's territory. In 2012, 2 new nature reserves and 15 natural monuments were proclaimed, all of them with the aim to protect Natura 2000 network localities.

In order to protect landscape character 7 natural parks were set up. Moreover, there are 410 notable alleys or trees proclaimed memorial trees. Registered are 136 significant landscape elements including mainly meadows, baulks, pools rich in flora and fauna or localities of endangered plant and animal species occurrence.

In 2012, the regional authority arranged for care of 67 localities with occurrence of protected species with total area of almost 250 hectares. The most frequent activity is grass

mowing, bushes clearing, and sheep and goat grazing. Moreover, the regional authority concluded 11 voluntary agreements on care of lands in the nature conservation interest. In scope of the regional grant programme 22 projects focused on landscape revitalisation and biodiversity were subsidized.

The Ústí Region continues to participate in the long-term project "Revitalisation of peat-bogs between Hora Sv. Šebestiána and Satzung – phase I" supported by "Cíl 3/Ziel 3 grant programme for strengthening of cross-border cooperation between the Czech Republic and the Free State of Saxony, 2007-2013". Care of habitats of *Cylindromorphus bohemicus* endemic species organized in scope of a long-term project co-financed from European structural funds continued in 2012, too.

Environmental Education, Training and Public Awareness

The area of environmental education, training and awareness in the Ústí Region

in 2012 was noted for its fruitfulness and large variety. The Ústí Region continued in cooperating with its partner EKO-KOM, a.s.. Results of already eighth year of "Glass Dust Bin" competition were announced: winners were the municipality of Vrbičny and the town of Krásná Lípa; jumper of the year the municipality of Modlany. In scope of the "Environmental Education, Training and Awareness Programme (EVO) in the Ústí Region for period 2009-2012" 25 projects received grants in total value of 1 mil. CZK. The Ústí Region was granted non-investment subsidy of 0.142 mil. CZK from the state budget to support the EVO National Network.

In October 2012 the first regional conference of EVO was held. In total 6 theme spots dealing with water, air, energy, waste, nature, and eco-agro were created. At the end of 2012 websites www.ekoecho.cz were established and the issue of a quarterly dealing with environmental education and current topics in the Ústí Region has started.



Waste management, old environmental burdens, accident prevention

Waste Management

In 2012 we could see general decrease in waste production in the Ústí Region. Total production of all waste kinds in the Ústí Region dropped by about 199 thousand tons to a total of 2.5 million tons in year-to-year comparison. The most significant drop (by 271 thousand tons) is related to waste excavated soil because of discontinuation or termination of excavation works on large construction projects, such as D8 motorway and R7 express road Vysočany – Droužkovice. Significant decrease (by 38 thousand tons) was also recorded at recycling facilities where contrary to previous years resulting recycled material was newly classified as a product, not as treated waste. There was also decline in municipal waste production, mainly in soil (by 22 thousand tons) as well as in paper and

paper packages. Increase in waste production – first of all in hazardous waste – on the contrary, is related to soil sanitation in scope of old environmental burdens liquidation, in particular former phenol factory in Chemopetrol premises as well as those in the Association for Chemical and Metallurgical Production in Ústí nad Labem. In 2012, the highest increase in waste production showed soil and aggregates containing hazardous substances (by 95 thousand tons) and construction waste containing hazardous substances (by 17 thousand tons).

Related to high hazardous waste production is subsequent waste handling. It consists mainly in different ways of treatment in order to produce waste of "other" category, which is then dumped on landfills or used as technological material for soil reclamation. In total 345 thousand tons were used compared to 171 thousand tons of disposed ha-

zardous waste in 2012. After treatment and removal of hazardous qualities waste soil coming from soil sanitation can be returned to the excavation site. Amount of hazardous waste disposed on landfills without prior treatment is minimal. In "other" waste category handling reuse significantly outweighs disposal. Most waste kinds in "other" waste category are used for landscaping (about 560 thousand tons). Significant role is also played by construction waste recycling facilities and waste sorting facilities where products that are not subject to the Waste Management Act regime anymore can originate after treatment. In municipal waste handling its disposal clearly outweighs its use – in figures it means 339 thousand tons of disposed waste compared to 198 thousand tons of used waste. The most common way of municipal waste disposal is dumping. The bulk of usable components

from separated waste collection is exported abroad. On a smaller extent municipal waste is used for power generation purposes as an alternative fuel, and biodegradable waste is composted.

Main disposal facilities in the Ústí Region are undoubtedly landfills. There are in total 14 landfills operated in the Region. The hazardous waste incineration plant is also partly involved in waste disposal. Current list of all authorized waste collection, purchase, reuse or disposal facilities in the Ústí Region can be found on Ústí Region's website: <http://websouhlasny.kr-ustecky.cz/>.



Agriculture, forest management, game management and fishery

Agriculture

A year-to-year comparison of acreage, production of main commodities and amount of livestock shows that situation in agricultural sector is stabilized within the bounds of possibility. However, ongoing decline in hops acreage and cow stock destined for market milk production is worrying.

The Ústí Region subsidized implementation of 52 projects focused on increase in agricultural production and desired maintenance of non-productive function of agriculture by 6 578 508 CZK (of which 3 153 411 CZK in current means and 3 425 097 CZK in capital resources). Competitions "Regional Food of the Ústí Region" and "Food Product of the Ústí Region – Přemysl, the Ploughman's Region" went on as usual. Culminating point of the agricultural year was the harvest home fest at Peruc.

Agriculture is affected by agricultural soil quality as well as the extent and integrity of agricultural lands. Soil is endangered mainly by contamination with harmful substances resulting from human activities, and by water and wind erosion. Soils of the highest quality in the Ústí Region can be found at Litoměřice, Louny and Žatec area. High threat to soil lies in a large-scale occupation of land for implementation of human activities. Another threat for soil rests in disturbance of integrity of agricultural lands and disintegration of areas, for instance, by construction of roads or other line constructions. Principal importance for agricultural land increments in the Ústí Region has agricultural land reclamation. Large areas are being returned to agriculture mainly after coal excavation in Teplice, Bílina, Most, Chomutov, and Kadaň districts.

Forest Management

Forest stands cover a total of 150 000 ha in the Ústí Region. Most part of forests can be found on the Krušné hory Mountain range,

Old Environmental Burdens

There has been no progress in liquidation of registered environmental burdens since 2011. Risk analysis for former children's vehicles factory at Duchcov contracted by the Ústí Region was finalized. Both geological environment and ground water are contaminated mainly by chlorinated hydrocarbons. Detected contamination does not, however, pose any immediate risk for population health or the environment.

Active sanitation interventions by which groundwater contamination by chlorinated

hydrocarbons is removed have been in progress in 8 localities.

Accident Prevention

In the Ústí Region there are in total 32 establishments or installations classified according to Act No. 59/2006 Coll. on the Prevention of Serious Accidents. There are 5 accident planning zones set in the Region for which an external emergency plan has been prepared. Details can be found on the Ústí Region's website: http://www.kr-ustecky.cz/zivotni_prostredi.asp.

in Šluknov area and part of the Bohemian Central Highlands (Litoměřice, Lovosice and Ústí area). The forest stands in the Ústí Region have been exposed to harmful abiotic impacts in the long term. In 2012, most significant factors were snow and frost deposits. Serious biotic forest stands pests are mainly eight-toothed spruce beetle, larch bark beetle and pine bark beetle. Rodents have become another considerable pest lately. They cause damage and in some cases even destruction of whole forest stands. They can be found mainly in Chomutov area (about 240 ha) and Most area (about 150 ha). In the Czech Republic the Ústí Region is affected most by this pest (40 % of the national damage). About 325 ha of forest stands were treated by rodenticides. Despite this measure further damage can be envisaged. In the Krušné hory Mountains higher occurrence of spruce needle-cast was observed at blue spruce and Norway spruce. Pine stands in Chomutov area have been extensively damaged by pine needle-cast (about 143 ha). In the north-east part of the Krušné hory Mountains significant pest affecting substitute tree species keeps to be fungal pathogen *Gemmamyces piceae*. In some localities the existing stands have already been critically endangered by this pathogen. Since 2009 the Ústí Region authorities have monitored development and health state of forest stands in the Krušné hory Mountains and put maximum efforts to raise sufficient amount of money for financing following reconstruction of the forest stands. In 2012, owners of damaged forests could draw funding only from the Ústí Region's grant programme and from the "Environment" Operation Programme. In scope of the "Forest Management in the Ústí Region Grant Programme for 2010 - 2013" 66 applications were granted a total of 12 000 000 CZK in 2012.

Game Management

Game keeping consists mainly in breeding and protection of individual animal

species. Recently, following habitats and animal species can be found in the Ústí Region:

Krušné hory Mountains, Lužické hory Mountains and Labe's sandstone area host the largest population of red deer in the Region. Roebuck, red deer, fallow deer, moufflon, sika deer, and wild boar range throughout the Region. Polabí area with intensive agricultural production provides suitable habitat for population of small game, both furred (brown hare) and feathered (pheasant). Occurrence of heath grouse was recorded in Krušné hory Mountains, and population of chamois in Česká Kamenice area is considered a curiosity.

In 2012, in hunting grounds of the Ústí Region, total area of which is 421 948 ha, 18904 pieces of wild boar, 5577 pieces of roebuck, 4006 pieces of red deer, 1034 pieces of moufflon, 962 pieces of fallow deer, 369 pieces of sika deer, and 3 pieces of chamois were hunted down; of small game it was 11252 pieces of pheasant, 11252 pcs of mallard duck and 1200 pcs of brown hare.

Damage to forest and field plantations or lands in areas with high stock of hoofed game is viewed as rather serious problem related to game keeping.

Fishery

Fishery management in the Ústí Region ranks exclusively among leisure activities – people go in for sport fishing in designated fishing grounds on streams and water reservoirs. Under the umbrella of the Czech Angler Union, the North Bohemian Regional Union associates fishermen in 47 local organizations (28 in the Ústí Region and 19 in the Liberec Region) representing basic organization units of the Union. With its 33 215 members (1241 women, 28420 men and 3554 juveniles) it is the largest hobby organization in the Czech Republic.