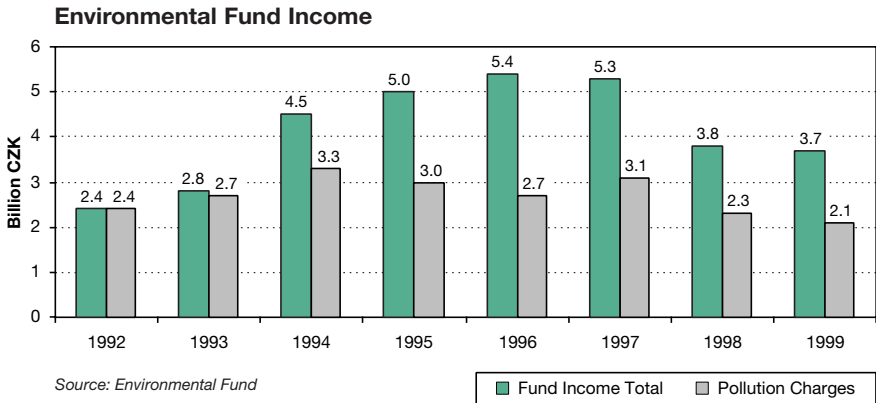


VI. ECOLOGY

VI.1 Environmental Legislation and the EU



EU Horizontal Legislation in Czech Republic

Reporting requirements (Directive 91/692/EEC)

Environmental monitoring in the Czech Republic is organized primarily along sectoral lines. The process of integration is ongoing. Integrated monitoring systems for hydrological and water quality data (HEIS – Hydroecological Information System) and air quality data (ISKO – Air Quality Information System) are operational, whilst the Agency for Nature Conservation and Landscape Protection is responsible for monitoring the biosphere, and the Waste Management Information System is run by the Czech Environmental Institute. Presently, the Czech Republic is not fully prepared with respect to its existing monitoring networks, to produce adequate reports which also include evaluations of statistical questionnaires.

Incineration of Hazardous Waste (Directive 94/67/EC)

At present, all incineration plants in the Czech Republic are subject to the emission limit values set by Decree of the Ministry of Environment No.117/1997. These limit values are not in compliance with Directive 94/67/EC. Full harmonization will be achieved through the new Clean Air Act and the implementation of a specific Decree. This legislation is currently being prepared and is envisaged to become valid in November 2001.

There are currently 50 hazardous waste incinerations plants and 24 clinical waste incineration plants operating in the Czech Republic. Most of these incinerators are in industrial plants. Approximately 1% of hazardous waste is incinerated. After adoption of the stringent emission limits required by the directive, the Czech Republic expects that a substantial part of existing incinerators will be closed down. There are plans

to upgrade about 10 incineration plants. The necessary additional incineration capacity will be achieved by the construction of a new incineration plant by the company MCHZ Ostrava with a capacity of over 10,000 tons/year. In the long term, the Czech Republic plans to increase the share of incineration and other forms of disposal, thus reducing the share of land filling.

Quality of Petrol and Diesel Fuel (Directive 98/70/EC)

The existing Czech legislation stipulates lead content in petrol as follows: a minimum

of 0.03 g/l and maximum of 0.15 g/l in leaded petrol; a maximum of 0.005 g/l in unleaded petrol. It also sets the maximum sulphur content in diesel fuel at 0.5 g/kg.

Directive 98/70/EC will be fully transposed by the new Act on Conditions of Operation of Vehicles on Roads and by implementing a decree which will be prepared by the Ministry of Industry and Trade. This Act will confirm the 1 January 2001 deadline for the phasing out of leaded petrol. The fuel quality requirements will be implemented by the date of accession.

Nuclear Plant Temelín Case

In 1980 the Czechoslovak government finalized its decision to build a new nuclear power plant by selecting a site near the town Temelín. Two years later, in 1982, a contract was signed with the Soviet Union to provide the necessary technology. The final construction permit was issued in late 1986; however, the site preparation had already started in 1983. The total planned output of four 1000 MW units was obviously too large to be finished and justified under the new economic conditions which followed the 1989 events, so in 1990 the Czechoslovak government decided to cut the capacity by one half and to reduce the originally planned four units to only two. Due to economic and political changes after 1989, the dates for completion were adjusted several times.

Later the original Soviet control technology was replaced with more modern Western technology to meet the highest safety standards. In 2000, after 20 years and 100 billion CZK in costs, the first unit was finished and ready for testing prior to normal operation. By this time, pressure groups had finally succeeded in involving a good part of the general public in Austria in protests against the power plant and its proximity to the boarder. This has subsequently widened the political gap between the two countries.

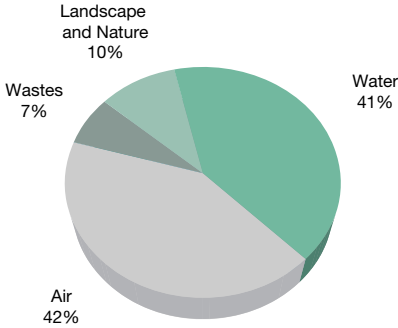
The nuclear power plant Temelín

Estimated Temelín Yearly Electricity Production	Consumption of Brown Coal in Coal Powerplants Reduced by	Resulting Reduction of Labor Input in the Coal Mining industry
10 – 12 TWh	10 – 12 M tons	5 800 employees

Source: MPO and MPSV

VI.2 Wastes and Pollution

Environmental Subsidies and Loans in 1999 (Total Expenses of Environmental Fund)



Ten years after the fall of the socialist block, significant improvements in environmental protection can be observed. Not only are the new legal standards comparable to those in the EU being implemented, but huge reductions in emissions and significant improvements in environmental quality can be noticed in everyday life.

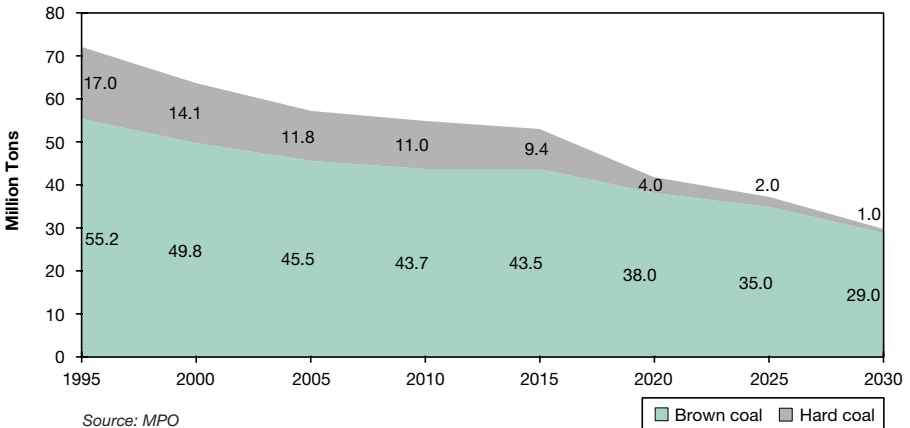
The Emission Limits (mg/m³)

Boiler Heat Output	Pulverized-fuel	Fluidized	
	50 MW up to 300 MW	over 300 MW	
Fly-ash	100	100	50
Nitrogen oxides	650	650	400
Carbon oxide	250	250	no limit set
Sulphur dioxide	1,700	500	500
Minimal Desulphurization Efficiency	70%	85%	75%

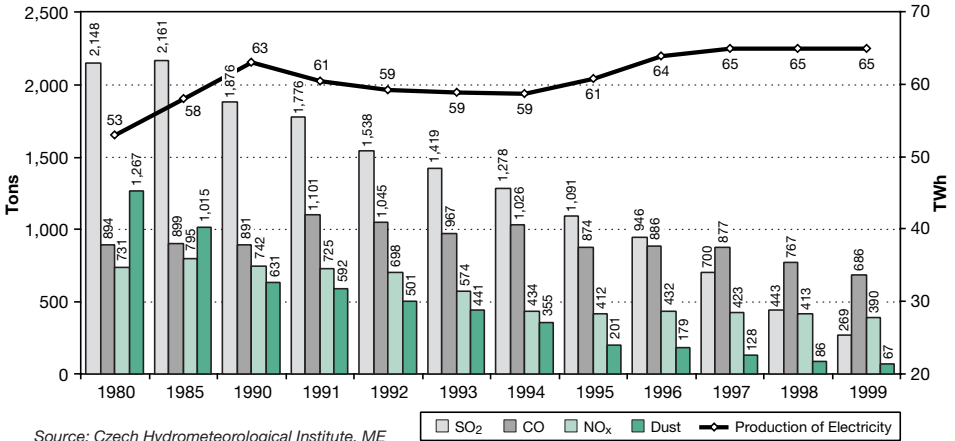
Source: Act 309/1991 Sb.

Major air pollutants of sulfur and carbon dioxides (e.g., power plants) had a temporary exemption from the emission limits until January 1999. From that time on, all major polluters are expected to utilize new technologies. Indeed, sulfur dioxide emissions dropped to one eighth of the level of the 1980's and even dust emissions were reduced by nineteen times. Moreover, a fur-

Coal Mining Prediction



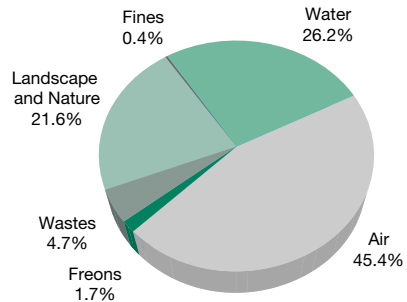
Waste and Electricity Production



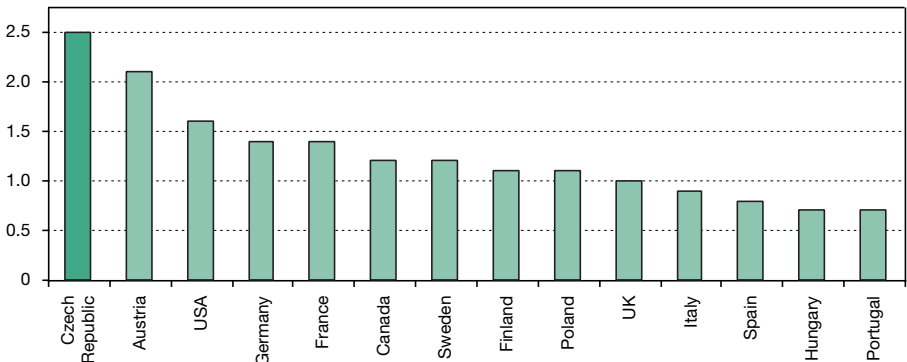
Source: Czech Hydrometeorological Institute, ME

ther reduction is predicted by the MPO once the newly finished nuclear plant near Temelin is in full operation. The other nuclear power plant in Dukovany currently produces about 20 per cent of the total electricity supply. The MPO estimates that both nuclear plants would reduce the emission of carbon dioxide by 17 per cent of the total emissions. The share of nuclear energy consumption is estimated to be about 38 per cent.

Pollution Charges Composition in 1999



Total environmental expenditures (% of GDP) – OECD countries, mid 1990's



Source: OECD environmental indicators 1998, CSO, ME

According to these predictions, coal mining should decline as outlined in the graph.

An improvement can also be seen in the declining income to the Environmental Fund that occurred primarily in 1998 when most companies were ready for the end of tem-

porary environmental protection relief. It is also expected that a reduction in nitrogen oxide emissions will occur if all new automobiles are required to be equipped with catalytic converters.

Packaging and Packaging Waste (Directive 94/62/EC)

The total volume of packaging waste per capita in the Czech Republic per year, including group and consumer packaging and transport, is estimated to be approximately 130 kg. This amount is expected to grow at an average rate of 3.6% a year.

The total volume of consumer and group packaging in household waste is estimated to be approximately 40 kg per capita per year, with an annual growth rate of about 1.6%. The current levels of packaging use are lower than those in some EU Member States; therefore, the presence of packaging in household waste is comparable.

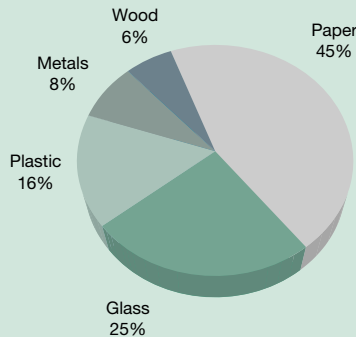
Current levels of recycling and recovery: Since energy recovery in packaging is not very well developed, all registered packaging waste recovery is currently in the form of material recycling. For packaging, the overall re-use is 7% and the overall recycling is 15%.

Existing recycling capacity: There exists sufficient capacity to recycle a substantial part of the packaging material collected, as is shown in the second table;

So far, because of qualitative and financial reasons, a substantial part of these capacities are used for imported secondary raw materials (especially in respect of glass works).

The Czech Republic is requesting negotiations to extend the transition period to 31. 12. 2005 for achieving the target values for recovery and recycling of packaging.

Packaging Waste Composition



Recycling of packaging according to the type of material

Paper	25%
Glass	10%
Plastic	5%
Metals	5%

Existing capacity to recycle

Paper	30%
Glass	80%
Plastic	15%
Ferrous Metals	100%
Aluminium	10%