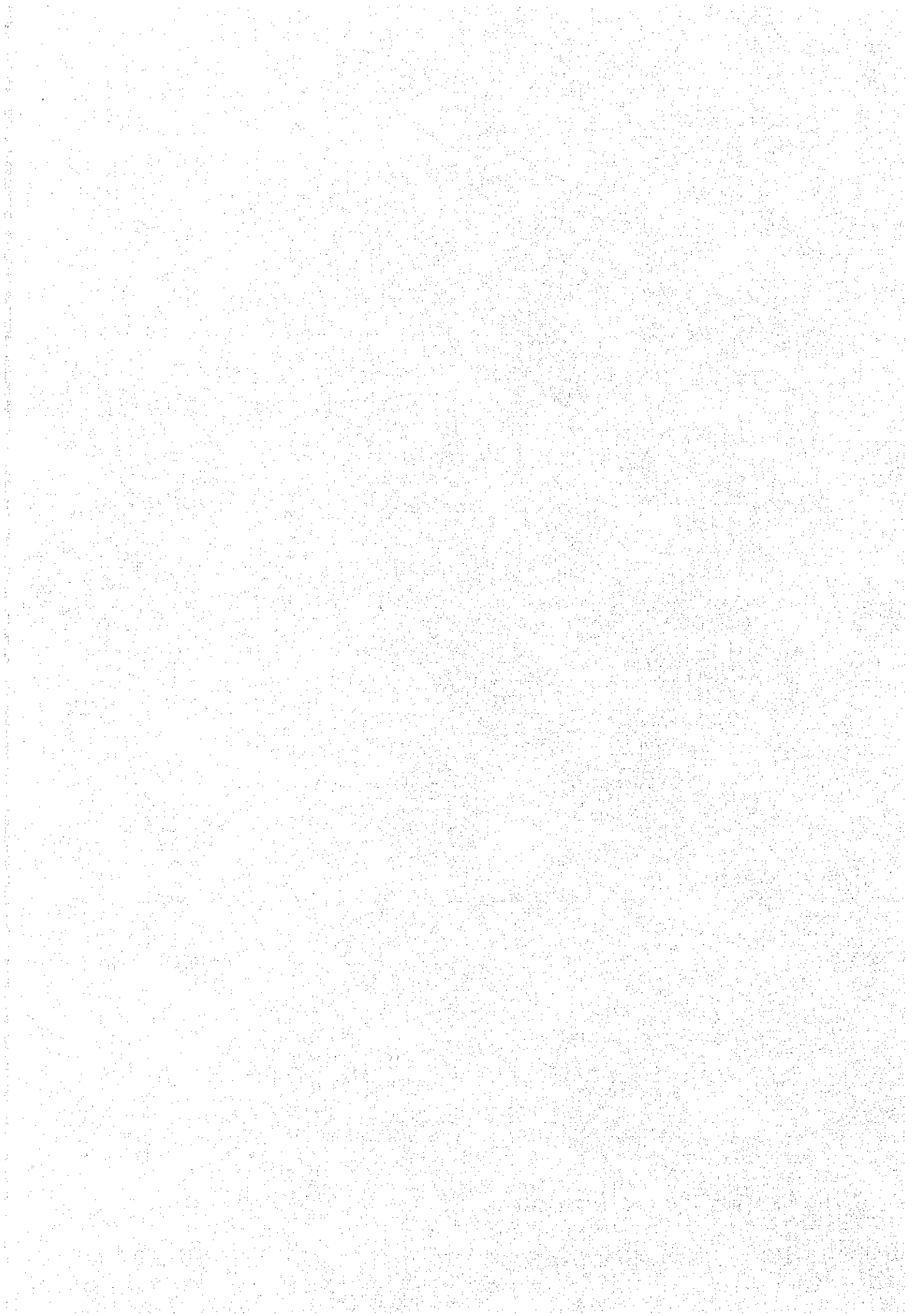


IX: 收集資料



MINISTRY OF INDUSTRY AND TRADE

POLISH ENERGY '92

Warsaw - 1992

1. MAIN DIRECTIONS OF OCCURRING CHANGES

Within the framework of the Economic Transformation Program, and with the support of the World Bank and the International Monetary Fund, the Government of Poland has been pursuing a series of economic reforms. In the productive sectors, the fundamental thrust of these reforms is to liberalize domestic prices and reduce subsidies, promote competition and free entry into the productive sectors, and transform the governance and ownership of state-owned enterprises as rapidly as possible. The spirit of these reforms is embodied in the recent privatization and anti-monopoly laws.

Since the liquidation of the Ministry of Mining and Energy and then the Energy and Lignite Board as well as the Hard Coal Board - which were central managing institutions - individual energy enterprises have gained authentic independence.

Within the programme of restructuring, privatization and reformation of the regulating sphere of energy sector, there are taken into consideration the enormous, still existing distortions in the price structure of energy carriers, high level of horizontal and vertical concentration of the present organizational structures in energy sector. The emphasis is laid upon some additional institutional support necessary for the development of competitiveness within the network of energy supplies as well as for the environmental responsibility of the energy sector which has been neglected for many years.

A strategic goal being set by the government in the energy sector, is the implementation of two basic tasks:

- the improvement of the economic effectiveness of production, transmission, distribution and consumption of energy and gain over of private capital, domestic and foreign, for energy investments.

An important condition to fulfil those tasks is to reduce the distortions in the price structure of energy in the country.

At the first stage it will be based on gradual reduction of subsidy for individual energy consumers and on elimination of indirect mutual subsidies between industrial and individual energy consumers.

At the second stage the government will increase energy prices to an economically justified level. It will be done either by setting the prices absolutely free or by establishing appropriate rules for price-creating within the regulating system.

Thus before competitiveness becomes an everyday occurrence for the whole energy sector and before foreign investors decide to participate in its development, the Polish energy industry will have to introduce serious changes into the structure, methods of management and forms of ownership.

These changes are presently taking place, in an explicit and a consequent way.

And so, according to the suggestions included in a special study on electro-energy restructuring, this subsector has been divided into three parts comprising the following enterprises:

- = production: all the independent power plants operating on competitive basis without any central managing organ,
- = transmission: high-tension transmission grids buying electric energy from power plants and selling it to distributors.
- = distribution: 33 independent local enterprises buying electric energy from high-tension grids and selling it to individual and industrial consumers.

Similarly, within the hard coal industry, coal mines have become independent and they cooperate with the State Hard Coal Agency in the fields of rational and coordinated economy of coal deposits, mining, damages and with respect to gradual but consequent reduction of state subsidies.

This is not a structure of destination yet. Within the electropower sector it is foreseen to create a joint stock company or a companies composed of lignite mines and lignite fired power plants.

Hard coal fired power plants are to be grouped in several joint stock production companies /or holdings/.

On the other hand, the number of 33 distribution enterprises will be reduced to several, keeping the Power Grid Company which comprise high-tension links, "regulating" power plants /hydro-electric and pumped-storage ones/ and the Electro-Power Dispatching.

Similar structure is provided for hard coal: grouping the mines in several holdings, free trade on domestic market and one institution for foreign trade.

Thus, the present structure of managing electro-energy and coal mining already differs substantially from the stereotypy existing before the introduction of reforms. The management of mines and power plants who have been divested of the previous comfort of only performing orders from the centre, presently must undertake technical and economical decisions in their own capacity and on their own responsibility.

Hitherto there remained in Poland, practically without major changes, the structure of the national enterprise of the Polish Oil and Gas Company. Nevertheless it is expected for the nearest future that also in this area there will be separated individual enterprises of gas exploration and, production, as well as transmission and distribution. Structural changes within the Polish industry of liquid fuels and distribution network are now at the stage of being after studies but before undertaking final implementation decisions.

Presently, the refineries, distribution stations and crude oil transport companies are independent state owned enterprises. As mentioned above, an important task is to acquire reality with regard to the prices of energy carriers. This socially painful process has been lasting and implementing for two years, gradually and consequently.

During the last two years there took place a substantial

/three-four times as large/ increase in energy prices.

As a final aim it is provided to abandon subsidising to coal by the end of 1992. That will practically mean liberalization of prices of all the energy carriers in Poland since 1993. Like in other countries of free-market economy there will remain however supervision of the State /i.e. appropriate institutions/ over the prices of "network" carriers /gas, electric energy, district heating/, on the basis of actually being prepared legal regulations.

The implemented process of gradual approximation of domestic prices for energy carriers to the level existing in Western European countries practically means the necessity of a further price increase. In the other hand, with reference to an average wage, the present prices are already higher than in Western countries.

One of the results of the growth of prices is the observed tendency to save energy, both in industry and in households. There can also be noticed an increasing interest in energy-saving technologies in various fields of industry and construction.

Another important consequence of changes in the prices of energy carriers as well as of turning to the world prices in convertible currencies in the trade with the countries of the former Soviet Union, is a possibility of making a choice of energy raw-materials by domestic clients. It creates conditions for diverging from the domination of coal in the domestic fuel and energy balance towards a higher participation of hydrocarbons and electric energy that are more effective in the usage and less harmful for the natural environment.

A deep economic recession existing in the country and connected with the transition from the system of a centrally planned to the system of a free-market economy, has caused a decrease in the demand for, among others, electric energy and coal, mainly from industry - to the level of about 60-70% of supply possibilities. This creates additional chances and circumstances for carrying on structural transformations and necessary reconstructions in the area of diminishing negative influence of energy sector on natural environment.

2. DIVERSIFICATION OF SOURCES OF HYDROCARBONS IMPORTS TO POLAND

The necessity of increasing the share of gaseous fuels in fuel and energy balance of the country results both from the restructuring plans of the Polish industry and from the decreasing share of solid fuels in the general: fuel and energy balance. That is a preferred tendency.

From preliminary analysis it can be concluded that the most effective way to acquire gas is to increase domestic production and import from the Northern Sea. Hitherto existing and the only exporter of gas to Poland, i.e. the former Soviet Union /ca 60-70% of the domestic consumption. i.e. 7-8 bln m³ annually/ will probably not be in a position to substantially increase the export to Poland. The import of gas from other directions is advisable also from the point of view of energy security of the country as it would relieve the dependence on the sole supplier from the East. At the moment it is difficult to precisely define costs and terms of eventual connecting of the Polish gas piping system with the Western European one, especially that the concept is not ready yet. Actually under consideration there are the following issues:

a/ joining the system with gas piping on the route Gorzów Wielkopolski - Berlin: a possibility of import of 1-3 bln m³ annually,

b/ construction of a separate connection of Poland with the deposits on the Northern Sea across the Danish territory: the destined import of ca 10 bln m³ annually. Presently discussions are being held at the level of interested gas companies from Poland, Germany and Norway.

The matter of oil pipes and the problems of diversification of sources of crude oil imports, similarly to gas imports, are

presently being the subject of analysis and bilateral and multilateral considerations, among others at the forum of energy group Hexagonale. From the Polish point of view however all the proposals should be looked upon within the context of structural transformations of the whole energy sector, and of oil subsector in particular.

3. CONTACTS WITH FOREIGN PARTNERS

Within the presently existing legal and organizational system, the Ministry of Industry and Trade does not practically participate in direct negotiations of the Polish energy enterprises with foreign companies. The law and detailed regulations changed during the last two years create conditions for enterprises to undertake independent decisions with regard to their economic and commercial connections with foreign partners. The Ministry of Industry and Trade deals first of all with the problems of restructuring and giving opinions on applications for privatization or liquidation as well as creating organizational and legal conditions /through preparation of drafts of normative documents/ for independent operating within the sphere of production and development of industrial enterprises in energy sector.

So far almost all the basic energy enterprises are state owned and they are provided to be commercialized into a form of single joint stock companies of the National Treasury. The matter of the range of privatization and its terms and organizational forms will be settled along with the progress in the implementation of the programme of structural transformations. Presently most frequently form of entering state owned enterprises into economic connections with foreign companies interested in cooperation, is joint venture.

One of the problems often observed during discussions with foreign partners is the reserved by them possibility to export electric energy or coal as a form of repayment of the granted

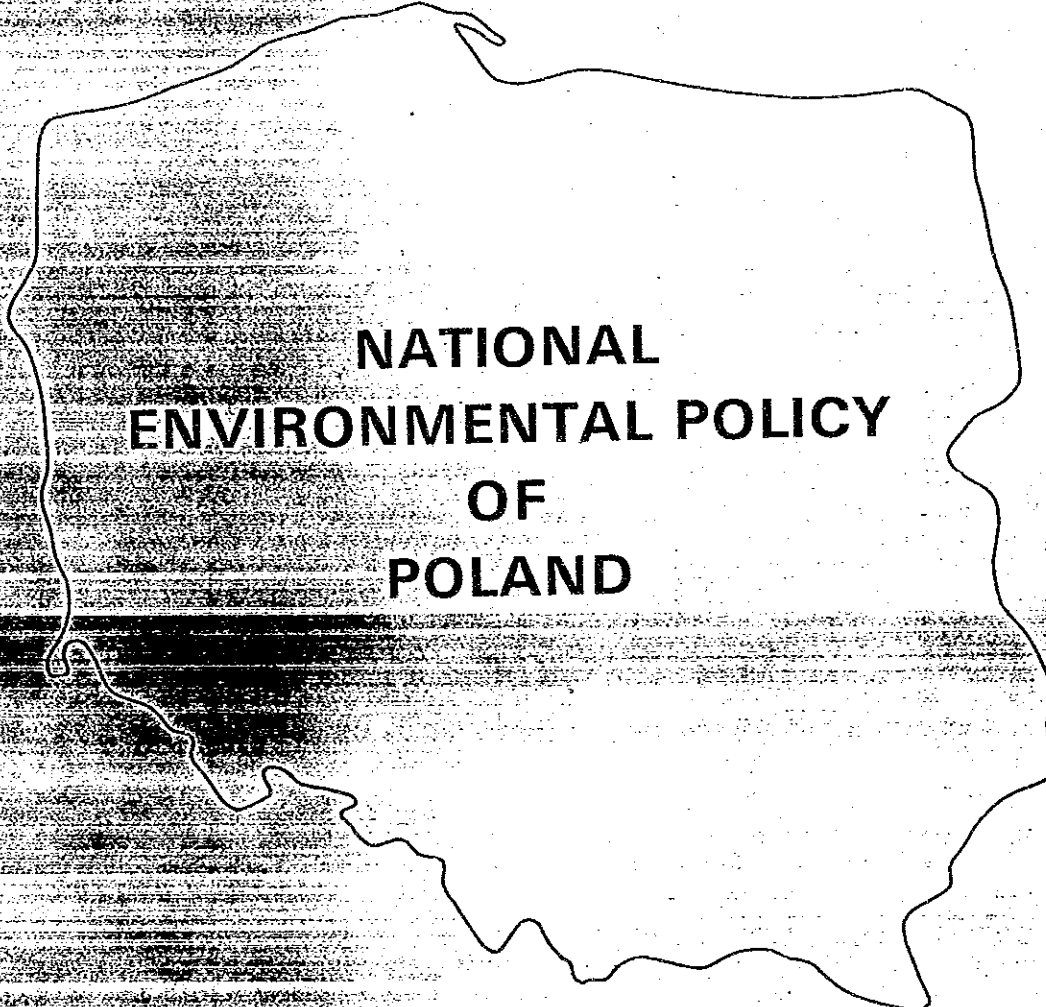
credit. Such standpoint results from still traditional attitude to the countries of the former COMECON that were centrally managed as well as from the mistrust in the stability of the occurring changes in the system.

There is the conviction that very soon the changes carried on in Poland will strenghten the confidence of foreign partners in starting mutually advantageous investments and in concluding long term commercial contracts.

European Energy Charter signed in December last year, creates a favourable international climate for joint deals of that kind.



**MINISTRY OF ENVIRONMENTAL PROTECTION, NATURAL RESOURCES
AND FORESTRY POLAND**

A large, irregular outline map of Poland, centered on the page. The map is empty, serving as a background for the title text.

**NATIONAL
ENVIRONMENTAL POLICY
OF
POLAND**

WARSAW



**MINISTRY OF ENVIRONMENTAL PROTECTION, NATURAL RESOURCES
AND FORESTRY**

NATIONAL ENVIRONMENTAL POLICY OF POLAND

WARSAW, MAY 1991

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I. REASONS FOR THE NEW NATIONAL ENVIRONMENTAL POLICY FOR POLAND

1. Poland, a country confronted with ecological disaster, faces the very difficult task of reshaping its environmental policy during a time of radical change in the national economic system. This policy refers to the content of the agreement of the Round Table Talks on environment and to the changes in political and economic life of the country. This new policy departs from what was once a narrow understanding of environmental protection, to a broader goal of sustainable development, i.e. the attainment of a balance between social, economic, technical and environmental conditions in the process of development. This kind of understanding for the idea of sustainable development should be beneficial to addressing society's social and economic needs.

2. The interrelationship between the state of the environment and the health status of the population ensures public support for sustainable development. A much lower life expectancy, excessive morbidity, development of environmental diseases and reduced physical and intellectual fitness of the population, as compared to developed countries, has prompted a heightened awareness of the issues. It can be assumed that every individual wishes to live a long and healthy life, and to be convinced that the next generation will grow under healthy living conditions. The awareness of these interrelationships stimulates voluntary action of society for the defense and improvement of the natural environment and thus overall living conditions. Full access to information on the state of environment and the state of health is needed to ensure expansion of this process. Similarly, the increased knowledge of the influence of pollution on human health enhances awareness of environmental problems, and demonstrates the ways to reverse negative impacts due to development.

3. At the same time, there is common ground between a sustainable development policy and the economic interest of the country. Closing the existing technical gaps between harvesting, processing and consuming natural resources, lead-

ing to waste, high costs and low quality of production can lead to economic benefits. The opportunity to gain such benefits is growing, particularly at a time of privatization of the economy. Thus environmental protection, in its broadest sense, will be an ally to a modern, effective and prudent economy.

4. The policy of sustainable development can prove to be highly beneficial in the context of international cooperation. Poland, being a rather small country on a global scale, is nevertheless one of the main contributors to global degradation of the natural environment (e.g. emission of CO₂, SO₂, NO_x, and pollution of the Baltic Sea). At the same time our country, because of its geographical position, plays a key role in the Pan-European system of natural interrelationships. Interest in the solution to global issues is growing steadily, particularly in highly developed countries. Poland, because of its catastrophic environmental situation, has an opportunity to attract external financial resources devoted to the reduction of global threats, since they can be more effective in Poland than in the developed countries. This will also enable easier access to foreign aid for environmental projects, for economic restructuring that will benefit the environment and for the protection of valuable natural resource complexes. Activities, undertaken to support sustainable development, will promote credits, transfer of technology, and reduction of debts.

5. Acceptance of these reasons as a basis for the introduction of sustainable development to society and to economic circles will allow an effective implementation of the national environmental policy. Launching the potential for humans to take action, re-orienting business to reap higher profits through thrifty and more efficient use of resources, and the demonstration of a unified concept of sustainable development as a target for foreign aid, provide a great chance to cross a milestone in broadly understood environmental protection policies.

II. SUSTAINABLE DEVELOPMENT AS A FOUNDATION OF THE NATIONAL ENVIRONMENTAL POLICY

6. The policy of sustainable development means on the one hand a manner of consumption and production which, in a sustainable manner, preserves the qualities and resources of the environment, and on the other hand, active protection of natural habitats. Both these approaches towards a sustainable development policy are appropriate in Poland. While an area covering 11% of Poland is considered to be severely environmentally threatened, approximately 27% of Polish land remains in a natural or very close to natural state. This situation calls for a differentiated regional, decentralized approach to environmental protection in our country.

7. The policy of sustainable development will be implemented through the enforcement of environmental requirements in every public and economic activity throughout the country, as well as through an appropriate policy towards neighbouring states. The consciousness of each citizen's sense of individual responsibility regarding environmental protection in all aspects of life: at home, work or play, must be raised. Under the changing conditions of the economic and political system it is necessary to incorporate the principles of sustainable development into the newly developed legal and economic framework as well as into the new management system. The process of economic reconstruction, now underway, shall, in addition to social and economic goals, take into account environmental goals.

An effective policy of sustainable development should embrace all sectors of the economy.

The basic principles of sustainable development policy

8. Excessive pollution is, at present, the main threat to the natural environment. The strategy for prevention of this threat shall be based on the principle of **control at the source**. This means that the choice of preventive measures and methods of remediation of damages, should be according to the following hierarchy:

(1) avoidance of pollution generation, i.e. activities aimed at the reconstruction of manufacturing and consumption practices to reduce the burden of pollutants;

(2) recycling, i.e. recirculation of materials and resources; recuperation of energy, water, and raw materials from sewage and waste; utilization

of wastes to reduce emissions into the environment; and

(3) neutralization of pollution, i.e. cleaning of wastewater, detoxication of combustion gases, and neutralization and dumping of solid wastes.

9. One of the basic principles of the new environmental policy shall be the **principle of law-abidigness**. This, under our conditions, means the necessity of reconstruction of the legal system and the system of enforcement in such a way that each regulation will be strictly abided, and that no opportunities will exist for circumvention of the law for reasons of "circumstances outside one's control", "public interest" or "impossibility".

10. The **principle of common good**, shall be implemented through the establishment of institutional and legal conditions to be enacted by citizens, social groups and non-governmental organizations. Action towards environmental protection will be promoted through environmental education programmes designed to induce a greater ecological consciousness and sensitivity of individuals and the public, and a new ethic of behaviour towards the environment.

11. In connection with the transition of the Polish economy to the market system, environmental policy will be, to the maximum extent, subject the **economization principle**. This means that the greatest possible advantage will be taken of **market mechanisms**, with the necessary maintenance through state intervention. During the initial period, market mechanisms should fully rule the production of environmental protection equipment. Gradually these instruments will be introduced into other spheres of environmental policy, for instance, the system of charges for the use of the environment.

12. The implementation of the economization principle shall take the form of strict implementation of the "**polluter pays**" principle. This means placing full responsibility, including material liability, for the effects of pollution and other damages to the environment, upon the originator, i.e. subjects utilizing the environmental resources.

13. In the reconstruction of environmental law and the system of economic instruments, the **principle of regionalization** shall be observed which means:

(1) extension (or introduction) of rights of the territorial (local) self-government and regional governmental administration to determine regional charges, standards and other environmental requirements towards commercial enterprises;

(2) regionalization of countrywide mechanisms and policy of environmental protection in relation to three kinds of areas:

- areas of environmental hazard, that is industrialized and urbanized areas;
- areas of great natural value (with the predominance of recreational functions, forests and "environmentally friendly" agriculture);
- intermediate areas (with predominance of intensive agriculture and modestly developed industry mainly processing industry); and

(3) connection (coordination) of regional policy with the European regional ecosystems (e.g. the Baltic Sea, and border ecosystems of neighbouring countries).

14. Poland's substantial role in the pollution of the European environment, as well as the transboundary influx of pollutants into the Polish territory, calls for the need to implement the **principle of common solution** by the entire international community to address European as well as global problems of environmental devastation. A need also exists for the strengthening of links between regional European policy with the regional ecosystems (e.g. the Baltic Sea, and border ecosystems between neighbouring countries).

15. Regarding the vast work still outstanding and the large investments required to reduce degradation and to revive the environment, the adoption of the **principle of staging** of long term plans with the selection of priorities for each particular stage needs to be implemented.

Main policies for particular spheres of the economy

16. The achievement of significant results in environmental protection requires reconstruction of those spheres of the economy which present the main source of threat to the environment, (i.e. energy production, industrial processes, and transportation); as well as a wider implementation of sustainable development in such sectors of the economy (mining, agriculture, forestry, etc.), which are directly linked with the use of natural resources, i.e. water, minerals, soil, etc. The necessary steps to be taken with regard to

particular economic activities are presented in the paragraphs to follow.

Rationalization of energy management

17. The power industry in our country, because of its devastating impact on the earth (i.e. emission of dangerous gaseous pollutants, accumulation of solid wastes and salinization of waters), represents a key problem to the implementation of sustainable development. The expected structural changes of industry toward low energy consumption methodologies of production are in accordance with the basic principle of sustainable development in the energy sector.

The Government shall strive to decrease the burden of this sector by the implementation of the following measures:

- effective use and conservation of energy in all sectors of the national economy through full utilization of market mechanisms, taxation policy, and administrative regulations;
- improvement of coal quality through deep enrichment, removal of pyrite, and as well, production of smokeless fuel;
- modernization of combustion techniques in coal-fueled power plants and a switch to environmentally safe firing systems, such as: fluidized bed boilers, low emission burners, and application of emission reducing additives to fuels;
- gradual change in the current structure of prime energy carriers towards carriers less dangerous to the environment; and
- installation of dust and gas reduction equipment and proper use of that equipment.

18. Conditions shall be created for the use of non-conventional sources of energy (geothermal, small scale and large-scale hydropower as well as facilities utilizing the energy of sun, wind and biogas).

19. There are prerequisites for the assumption, that for economic, ecological and social reasons, nuclear energy is not an alternative for producing energy in our country in the near future. When considering the use of nuclear energy in the distant future, special attention must be given to the issue of nuclear safety. This refers specifically to the siting, intrinsic safety, disposal of medium- and low-radioactive waste, processing of spent nuclear fuel, and disposal of equipment and structures after termination of use. The analysis of radiation safety must be related to groups of people threatened by the operation of the nuclear power plant as well as to

future generations endangered by the effects of wastes and residues left behind after the plant has been shut down. The weight of safety in the overall risk assessment must be such that consideration be given only to those technical solutions meeting the highest available quality standards.

Change in the structure of industry

20. The present re-structuring of industrial production i.e. the reduction of the complexes of fuel industry and steel industry which has been in operation for decades, shall be the guiding principle in the aim to improve and protect the environment. The changes taking place in the economic system, formed by market requirements, must respect restrictions provided by environmental law.

21. It has to be expected that the reconstruction and modernization of industry will in effect lead to:

- reduction of energy, material and water demand by production processes, which will slow down the use of natural resources and in most cases emission of pollutants;
- broader implementation of cleaner technologies (producing no or low waste) and the recirculation of water, utilization of waste, and hermetic closure of production processes, which will reduce the amount of pollution rendered to the environment;
- creation of an industry that will produce equipment for environmental protection; and
- installation and proper management of equipment for the reduction of pollution by specially trained services in industry.

22. Parallel to activities aimed at environmental protection, with regard to production processes, the quality requirements for manufactured materials, as well as final products, will be raised gradually.

Reducing the pollution related to transport

23. Environmental goals in the development of transport shall be achieved primarily through improvement of public transport systems and promotion of "clean" transportation systems with regard to pollution and noise emission. This refers to both the means of transport and reloading devices.

24. The development of motor transport will depend on the possibilities for production and importation of vehicles, mechanisms, and machines with fuel engines characterized by low emission of pollutants, supply of fuels meeting

international standards, reconstruction or elimination of engines requiring leaded petrol, and as well commencement with the manufacture of lead-free petrol and motorcar catalyzers.

Rationalization of water resources use and management

25. A more efficient use of water by industry, agriculture, and households shall be enforced mainly through economic means. Thus, the price of water for all users will reflect the economic rarity of water resources on a regional basis. Similarly, the charges for wastewater disposal will be equivalent to the cost of construction and operation of water protection facilities and any changes in production technologies.

26. The government policy for the management of water resources will be based on:

- decentralization of management by the implementation of a river basin management system;
- reduction in allowable concentrations of pollutants deposited into surface waters, and the ground, as well as the introduction of progressively growing charges for disposal in order to significantly improve the quality of surface- and deep ground waters;
- strengthening of economic instruments in order to enforce efficient use of water and the minimization of losses of water in the pipe network, and recirculation of water in industrial processes and energy production;
- continuous increase in the amount of water stored in retention reservoirs and delimitation of protected drainage areas to secure a high quality of the water retained;
- restriction of deep groundwater use for industrial purposes to only food processing and manufacturing of pharmaceuticals in order to protect the water supplies of households;
- improvement in protection of the public and national wealth against flood disasters; and
- utilization of rivers for energy production and transport where it can be justified as environmentally safe and economically sound.

Rationalization of mining and use of mineral resources

27. The protection of mineral resources will concentrate on abandonment of mining when a substitute of a given raw material becomes available and on the reduction of materials used to manufacture a single product. Parallel to the implementation of reforms to the general econo-

mic system the following action shall be taken:

- creation of a comprehensive geologic and mining law which will guarantee a sparing and rational management of non-renewable mineral resources, in particular, through introduction of economic factors corresponding with the value of the main mineral and secondary minerals of the same bed, and by embracing geologic exploration and exploitation by market mechanisms; and
- creation of economic conditions for the modernization of processing facilities and introduction of new technologies for the enrichment and purification of mined minerals.

28. In the surroundings of mining and processing enterprises, action will be taken to reduce the intensity and range of environmental abuses. One of the means by which to increase effective use of minerals will be a system of concessions required for the access to beds and deep ground waters, including thermal and curative sources.

29. Geologic exploration for minerals and deep waters will be continued simulatenously with improvement and development of research and cartographic methods.

In exploration and documentation activities, the full assessment of mineral beds shall dominate. Thus ecological parameters will be introduced as principles for exploration, documentation and stock taking of mineral beds. The criteria regarding the degree of rarity of a mineral shall be included into the bed classification system, as well as the elaboration of particular principles for the management of particular kinds of beds. Special regulations shall be issued to enforce the duty of determining all the resources of all minerals present in the deposit.

Use, protection and landscaping of living natural resources

30. The goverment shall support the implementation of the concept of an integrated system of protected areas through the establishment of new national parks and natural reserves as well as landscape parks and areas of protected landscape. The basic role of these areas will be to preserve the natural environmental and landscape qualities which have great scientific and cognitive values, ensure the ecological protection of areas under special protection, and as well, protect densely populated urbanized areas with heavy economic activity by retention of areas oriented towards "green" methods of husbandry and in

creation of conditions for outdoor recreation associated with areas of intact nature.

31. Structural improvement of protected areas is necessary, among others, by distinguishing between national and local landscape parks.

32. It will be necessary to increase the acreage covered by the ecological system of protected areas up to 30% of the country's territory, out of which the area of national parks should reach 1% and the natural reserves 0.4 – 0.5%. As a result, all the ecosystems and biotopes, representing natural communities typical of Poland's range of geologic formations still remaining untouched or only slightly affected, should be embraced by full or partial slightly protection.

33. The main goal of the government policy is to retain forests as the main component of ecological balance of the biosphere and to retain all other living natural resources specific to the environment of our country. The basic assumption of sustainable development is the integration of rational management of natural resources while protecting them against the negative impacts of economic activities.

34. The prospective goal of actions taken by the government administration, the self-governments, and the public should be the attainment of a situation which would secure:

- permanent functioning of ecological systems through preservation of valuable natural and cultural complexes, and the full array of plant and animal species, as well as their gene pools;
- preservation of useful values of natural resources, intensification of their productivity and biological and chemical purity; and
- setting up of adequate natural areas on a countrywide, regional, municipal, and local district scale for proper mental and physical development of humans, and effective protection of public health and recreation based around natural resources.

35. Forest resources constitute a basic treasure. Their preservation and longevity present an important factor in a balanced ecosystem and a source of renewable raw materials. Forests fulfill a variety of functions for purposes of sustaining the environment, as well meeting a variety of social and economic needs. Their preservation should be a goal of everyone engaged in economic and public activities.

36. The following activities shall have the greatest weight in forest management:

- augmentation of biological resistance of fo-

rests and their ability to self-regulate forest ecosystems;

- neutralization of processes leading to the death of forests, particularly mountain and other stands located in areas of environmental hazard
- preservation of the gene pool of wild plant and animal species;
- increased forest area, including watershed areas, to prevent run off thus increasing the biological productivity of the area;
- formation of natural, multifunctional forest communities, enrichment of the biological structure of communities close to natural areas, and the creation of substitute communities in degraded areas; and
- making better use of forest's natural ability to respond to improved management practices.

37. The government shall promote the con-

servation of agricultural land and improvement in quality of food crops. The basic directions of activity should aim at:

- reduction and elimination of negative impacts of farming on the natural environment;
- protection of soil, but first of all the elimination of degradation processes and the neutralization of chemical pollutants of soils;
- reduction of land area appropriated for building purposes and minimization of deformation of biologically active soil surfaces, particularly with regard to highly productive arable land;
- counteracting processes leading to the lowering of ground-water tables and negative impacts caused by drainage systems;
- encouragement of ecologic/bio-dynamic farming systems and production of "healthy" food; and
- reclamation of land degraded by industrial activities.

III. ORGANIZATION OF ENVIRONMENTAL PROTECTION -- THE SYSTEM OF AUTHORITY AND RESPONSIBILITY

38. The State, as an organizer of economic and public life, is in the end, accountable to the citizens for the overall state of the environment and the use of natural resources.

39. The duty to protect the environment rests on each individual and corporate entity. The public has the right to come out in defense and organize itself for the protection of the environment. The government and self-government administration, which constitute the system of environmental authorities, are responsible for providing conditions to implement complete and publicly acceptable environmental management systems.

Government administration

40. The main duties of the central state authorities are:

- to secure proper health conditions for the population;
- to provide conditions for the thriving of nature in prosperity;
- to create an institutional environmental management system that ensures effective and efficient implementation of protection measures;
- to create a coherent legal system of environmental protection;
- to introduce a system of economic instruments and mechanisms for financing environmental protection;
- to maintain an administrative supervision of the quality of the environment, including objects of protected nature;
- to provide conditions for the creation of an effective and economically efficient environmental monitoring system;
- to initiate and coordinate practical activities aimed to protect the environment which will be carried out by territorial government administrations and state commercial enterprises;
- to stimulate environmental related research and environmental education for teachers and children, as well as upgrade courses for professionals;
- to create conditions and inspire activities to raise public awareness and sensitivity to the environment; and
- to carry out international policy in the sphere of environmental protection.

41. As economy shifts towards a market

system, the activities in environmental protection should be reckoned among branches which require state intervention, thus, which cannot be subjected to the market mechanisms alone. The government is responsible for the elaboration of mechanisms and the scope of such intervention. It is the duty of the government to establish technical standards preventing wasteful utilization of geographic space, raw materials and energy, and to promote technical designs and structural changes which will reduce the negative impacts on natural resources affected by industry and economic development.

42. The main task of the territorial government administration is to:

- (a) monitor and predict the environmental situation,
- (b) regionalize the national environmental policy,
- (c) issue administrative decisions as prescribed for the governmental administration and deriving from the environmental law,
- (d) supervision and inspection of commercial enterprises,
- (e) coordination of all kind of environment-protecting activities on their respective territories.

43. The territorial structure of government administration will be developed in three forms:

- (a) regional (above the voyevodship) structure taking care of particular areas of environmental protection;
- (b) presently operating voyevodship structures with a wide scope of competence in the execution of environmental laws (issuance of administrative decisions foreseen by the law);
- (c) district (within the voyevodship) structures aimed at direct cooperation with territorial self-government.

44. The regional structures of government administration will be established, with great caution, when the voyevodship boundaries present a barrier to resolving environmental problems.

At present, these conditions are fulfilled for the following areas:

- water management based on a river basin self-financing arrangement (such structures are in the course of establishment);
- state environmental monitoring (independent

of structures which may be arranged at voyevodship level);

- forest management, in accordance with natural forest regionalization); and
- nature protection

45. The competence of the voyevodship government administration will be adjusted through:

(a) transfer of partial control to the regional authorities (water administration, environmental monitoring);

(b) transfer of part of competence to the territorial self-government (e.g. applying penalties, administering decisions to commercial enterprises of local scope, and disposing of part of target funds etc.);

(c) extension of a regional government's rights to pursue regional environment protection policies (determination of standards stricter than those of the rest of the country, raising fees and penalty charges, deciding on the transfer of rights to use the environment, etc.).

Territorial self-government administration

46. The regional structures of the government's administration of environmental protection shall present authorities with control of detailed activities of voyevodship authorities and directly support the activities of territorial self-governments.

47. Strengthening of territorial self-government as the territorial cell of environmental authority shall be implemented as follows:

- strengthening of the commune's position in the process of investment siting procedures not only in relation to local investments, but also in relation to projects of voyevodship and country-wide importance and providing full rights to participate in the impact assessment practice;
- introduction of procedures that would allow the commune to take the role as initiator or party in cases where authority usually rests with the voyevodship or the central authority (e.g. designation of natural monuments, reserves, communal parks and other protected structures located entirely or partially within a commune's boundary and tightening of standards as well as raising fees and penalties above the level adopted for the whole country or voyevodship);
- participation in disposal of a portion of target funds originating from remittances paid by enterprises exerting influence on the environment within the commune's area.

- participation in the procedure related to licensing (i.e. issuance of permits to pollute the environment).

Responsibility of economic entities using the environment for effects of their activities

48. Holding users of the environment responsible for the resultant impact due to their activities is the basic principle for the environmental legislation presently under review. This principle will also be the basis for practical enforcement of these laws and for the policy of government and self-government administration in environment and self-government administration in environmental protection. Responsibility shall be understood as a moral standard for the evaluation of the behaviour of citizens' and economic entities; as well as a legal standard with respect to material, civic and penal law.

The above mentioned responsibility will concern every user of the environment, independent of the organization of the economic life, and in particular:

- every citizen and every household;
- every entity in charge of organized living arrangements, (e.g. housing cooperatives, communal enterprises, communes, and voluntary or compulsory societies of communes); and
- every producer or provider of a service.

49. The legal responsibility shall be defined in particular to the:

- obligation to remove the effects of, or terminate activities, harmful to the environment;
- compensation for the proved damages caused to individuals or corporate bodies;
- bearing of payments provided for by environmental law and appropriate to the reclamation of the degraded environment;
- discharge of payment of imposed penalties for offences and misdemeanour affecting the environment.

Duties of citizens, role of the public

50. The duties of citizens with respect to environmental protection are of a dual nature:

- personal responsibility for their own activities affecting the environment combined with household management, economic activity on own account, recreational use of environment etc.; and
- personal participation in costs of environmental protection, since eventually all the

expenditures incurred by the state or economic entities are debited to the citizen in the form of taxes or prices of commodities acquired.

51. The interest of local community leaders to cooperate in the framework of councils, informal groups, schools, and educational establishments is of fundamental importance.

Support for informal environmental organizations and their contacts with similar organizations in other countries is an important element of

efficiency in environmental policy. This efficiency, however is based on a democratic selection of goals and verification of paths to their attainment.

52. The environmental goals are accepted within the framework of religious doctrine. The influential power of church institutions should be, to a higher extent, included in the development of social behaviour that supports the pro-ecological policy of the state.

IV. PRIORITIES IN ENVIRONMENTAL PROTECTION

53. Given the long term negligence of environmental protection that has taken place, as well as the limited availability of resources to be allocated by the State and the public to address the situation, there is a need to prioritize environmental protection goals, draft a schedule for their attainment and identify financial sources with which to execute particular tasks.

The priorities for environmental protection have been presented below within three different time frames:

- near-term priorities -- implementation should be commenced immediately with the attainment of results envisaged within 3–4 years. Within this group outstanding tasks, the execution of which cannot be postponed because of their effects on human health or life, are considered;
- medium-term priorities — embracing systematic action aimed to protect water, air, land and nature to counter the unfavourable trends of emission of pollutants into the environment causing the continued degradation of the environment, to reverse those tendencies and to substantially limit the pressure on the environment. The implementation of medium-term goals should enable Poland to move closer to European environmental standards and allow it to join the EEC. It is envisaged that medium-term goals should gradually be raised during the implementation of the near-term priorities programme (within 3–4 years) and completed within approximately 10 years (by the year 2000); and
- long-term priorities — the full introduction of sustainable development principles into the entire economy and the attainment of such a state of environment which, according to our present criteria, could be considered desirable, securing safe public existence and stabilization of a thriving natural environment. The long-term goals, as it is understood, require a period of 25–30 years to be achieved (at least until 2020).

54. Regarding the implementation of environmental protection priorities, the activities of state institutions, local governments, economic enterprises, non-governmental organizations and other organizations as well as individual citizens should be concentrated. Those activities will be supported financially and organizationally by the State.

The environmental priorities formulated below do not include all actions that will be required. It should be understood that there might and should be further countrywide, regional, local, enterprise-oriented, or even individual environmental goals, formulated and implemented as called for by the law or emerging from needs felt by the public and expressed by social and political organizations including environmental NGOs.

Near-term priorities

55. The following near-term priorities are being adopted:

(1) abandonment or change of manufacturing profiles or implementation of protection measures under extraordinary circumstances (i.e. breakdown) in industrial plants emitting dangerous substances into the air, disposing of toxic substances into waste waters or storing dangerous substances hazardous to human health or life. This refers to the 80 industrial plants included in the countrywide list as well as 500 other enterprises which will be indicated by the voyevodship lists under preparation. They should be subject to intensive supervision by the environmental authorities and the public;

(2) implementation of the coal quality improvement programme (pyrite removal from sulphur – containing coal and rise in calorific value of pulverised energetic coal) and the adaption of coal used for domestic purposes to the world standards as well as the utilization of simple reserves (for instance the improvement of the efficiency of technical supervision, organization and management aimed at the reduction of particulate and SO₂ emissions into the air). This activity will initiate the implementation of environmental and economic programmes aimed at the improvement in energetic efficiency and in more efficient use of resources;

(3) noticeable reduction in dust and gaseous emissions, particularly in Upper Silesia and as well in other regions where environment and public health is threatened (this refers especially to the reduction of low and dispersed emissions);

(4) reduction of deficits in quality drinking water supplies for urban areas, mainly through the construction of sewage treatment plants sited along tributaries of Vistula, Oder, and Pomeranian Rivers, with simultaneous modernization of waterworks systems and the increase in the water retention capacity as well as through improved

water management (including realization of water bills);

(5) radical reduction of the solid waste burden through the implementation of an adequate management system of industrial and municipal solid wastes and disposal of toxic wastes;

(6) gradual diminution of food crop production on soils affected by toxic substances, first of all in the Upper Silesian region (combined with the change in the profile in agriculture in those areas);

(7) initiation of the reduction of environmental effects caused by means of communication and transport;

(8) improvement of ecological security on state borders through the extension of frontier monitoring systems (air, water, solid waste);

The above list of priority tasks for the next period has to be supplemented with additional two which have a different character:

(9) intensive afforestation programme, particularly of watershed areas and land unsuitable for agricultural use;

(10) education of the public with particular emphasis on the development of responsibilities for the state of environment and respect for the nature.

The impact of the latter activities will be visible only after many years. Nevertheless any postponement in their commencement would be inappropriate. They belong to that kind of investments which cost of implementation is manyfold lower than the cost of repair of damages, which otherwise could be prevented.

Medium-term priorities

56. With regard to air quality protection, the following priorities have been identified:

- reduction of SO₂ emissions into the air by 30% as compared to levels of 1980 (i.e. from 4.2 million tons/yr at present, down to 2.9 million tons in the year 2000);
- reduction of NO_x emissions into the air by 10% (i.e. from 1.5 million tons/yr at present down to 1.3–1.4 million tons in the year 2000);
- reduction of dust emissions into the air by about 50% (i.e. an increase in the elimination of particulates from stackgases emitted by industrial and power generating plants from 92% at present to 96% in the year 2000);
- reduction of emissions of volatile organic substances, hydrocarbons including (benzo-a-pyrene), heavy metals and other air pollutants;

- taking up actions adequate to those endeavoured by the international community to counteract global climate change (i.e. reduction in emissions of CO₂ and other gases causing greenhouse effects, and protection of the ozone layer).

57. Within the scope of protection and rational use of water resources the priorities are the following:

- reduction of pollution loads disposed of by industry and municipalities into the rivers by 50% through the decrease in the amount of untreated industrial and municipal sewage from 0.5 billion and 1.2 billion m³ at present to 0.1 billion and 0.6 billion m³ by the year 2000 respectively, as well as increasing the rate of highly effective wastewater treatment systems (biological and chemical) in the overall sewage treatment from the present 48% to 70% in the year 2000;
- improvement of sanitary conditions in rural areas by supplementing village pipeline water supply systems with adequate sanitation solutions;
- alleviation of water shortages in urban areas and provision of water supplies for drinking and production purposes in the villages;
- reduction of negative impacts resulting in saline water disposed of into the Upper Vistula and Oder Rivers; and
- utilization of deep groundwaters (termination of industrial use of these resources except for food and pharmaceutical industries);

58. For the remaining issues regarding environmental protection the following priorities have been identified:

- proper processing or safe storage of all hazardous wastes;
- reducing all massive industrial wastes requiring storage/dumping by 20% and increasing the rate of their utilization;
- creating a system of preselection and recycling of municipal wastes and introducing techniques of composting, incineration, and biogas production;
- recultivating degraded land to be put back into natural use;
- implementing noise control so that no more than 25% of the total population would be temporarily exposed to noise exceeding the set standards; and
- creating a system of early identification of non ionizing radiation and counteracting the threats of ionizing radiation to the environment as

well as catastrophic emissions of chemical substances.

Long-term priorities

59. The following priorities have been outlined to meet a long-term strategy for environment protection:

- introduction of environmentally friendly, modernized manufacturing techniques throughout all production processes with support being given to the implementation of clean technologies rather than to the construction of expensive "end of pipe" cleaning equipment;
- restoration of environmental damages and the creation of a system preventing their repeated occurrence (i.e. in response to market distortions);
- restructuring of the economic system to work in tune with environmental protection such that economic gains are linked with the state of the environment;
- consolidation of environmental, cultural, and ethical values, as well as attitudes that provide

for the draw of benefits from dispersed actions useful to the environment;

- consolidation of the philosophy of sustained development as a durable base for economic and social policy of the State, local municipal self-governing bodies, enterprises, and institutions, as well as individual citizens.

The results of the implementation of the above listed activities and measures will largely depend on the prioritization made today. The adoption of a comprehensive environmental programme for the economic and social development of Poland is at stake.

60. The implementation of the long-term strategy of environmental protection requires inputs assessed at the level of 2500 trillion zloty (i.e. 260 billion US dollars). This figure also contains the cost of the desired change in the structure of the economy and the switch to environmentally-safe technologies. The environmental protection programme is thus envisaged in the long term as an integral part of the strategy for the development of the economic system.

V. ENVIRONMENTAL POLICY TOOLS

61. Effective implementation of the national environmental policy must be supported by tools that will enhance the implementation of environmental protection priorities; and equipment designed to monitor emissions and enable effective control of their spatial and temporary distribution. The legal and administrative regulations, economic instruments, inspection and monitoring systems, as well as research, should be regarded as such tools.

Legal and administrative tools

62. The ultimate solution to environmental degradation in Poland is the complete codification of environmental protection regulations. However, such innovative solutions on a global scale must be considered for development in the future. At present, a complex amendment of existing acts is necessary. It is considered most appropriate to draft one comprehensive act containing general principles and common standards for all forms of environmental protection; and divisional acts, such as the Water Law, regulations concerning forests, the Hunting Law, the Mining Law, the Ecologic Law or the Building Law.

63. The basic goals for the changes being introduced, complying with stipulations of environmental groups, will be the following:

- a full coherence with other elements of the Polish legal system;
- accordance with international obligations adopted by Poland;
- assurance of feasibility of duties imposed and practicability of rights granted; and
- clarity and explicitness of the language adopted.

64. The main principles of the proposed legal solutions should in particular be:

- **the principle of universality of environmental protection**, expressed by the unified imposition of duties towards all subjects, including administrative organs and any other organizational units and physical persons. In effect, however, a greater degree of specification for concrete duties required by commercial subjects should be elaborated;
- **the principle of sustainable development**, demonstrated in particular by the unequivocal statement that the duty of environmental protection cannot be treated as one which remains in conflict with the in-

terests of the economy, but which constitutes an element of proper economic management, while any activity violating that duty is absolutely illegal;

- **the principle of including the environmental protection requirements in planning activities**, combined particularly with the augmented role of physical planning in the proper management of natural resources;
- **principle of cost efficiency** meant as the attempt to implement environmental goals at the lowest cost possible to the public under efficient application of market mechanisms;
- **principle of non-exceedance** of the legally or administratively established scale of intrusion into the environment even, when the potential users are prepared to take the burden of financial compensation (e.g. in the form of monetary fine) for the abuse;
- **principle of the polluter's responsibility** for the infraction or menace to the environment incorporated into a diversified and specified system of sanctions of civil, administrative, penal and labour legislation;
- **principle of active participation of citizens and public organizations**, expressed by various forms of public inspection of environmental protection, the universal right to advance claims aimed at abandonment or limitation of acts against the environment, and the universal right of access to information about the state of environment and the means of its protection;
- **principle of regionalization of environmental protection** provided by the transfer of the majority of ruling rights to the local administrative entities organs and by leaving only the general, state rights, to the central authority;
- **principle of local self-government participation** in securing environmental protection, understood as a gradual process in the growing role of self-government entities due to their strengthened position and elevation of expertise.

65. The principles of the new environmental laws, indicated above, will be included into legal acts presently under preparation. This refers in particular to the following laws:

- the Natural Environmental Protection Law, which will regulate problems embraced by the presently valid Acts of Protection and Shap-

ing the Environment and the Act of Protection of Nature;

- the Water Law, repealing the present act of the same name, taking into account in particular the changes in the water management system, changes in ownership, and the development of local self-governments;
- the Forestry and Forest Management Law, replacing regulations presently contained in various legal acts, primarily stressing the environmental functions of forests;
- the Geological and Mining Law, replacing outdated legal acts and introducing particular changes aimed at the assurance of environmental protection requirements in exploration and exploitation of mineral and fossil resources;
- the Hunting Law, adapting the regulations on game management, game protection, and hunting to the present requirements for protection of forest flora and fauna;
- the State Inspectorate of Environmental Protection Act, being a new law aimed at the transformation of this institution into a strong, centralized organ having broad rights of an "environmental police".

66. Later on, extension of regulations concerning extraordinary menace to the environment through their adaptation to the legislation concerned with other threats to human life and health, to nature and the national economy, is envisaged. It should be a separate, complex legal act. A similar, complex legal act is also necessary with reference to all the issues of waste management.

Economic instruments

67. All the environmental fees and the emission permit markets together with the supplemental subsidies (granted in the form of direct grants, tax exemptions or preferential credits etc.), tools which do not strain on the state budget (i.e. tax diversification, deposits on dangerous substances) and finally the penalties for the abuses of permissible standards of use of environmental resources, belong to the group of economic instruments. Based on the experience of the most developed market economy countries, the economic instruments shall supplement legal and administrative tools.

68. The economic instruments will serve to minimize public costs of environmental protection through an effective differentiation of protection requirements; hence subjects (i.e. polluters), bearing the lowest costs of environmental protection should be faced with the most stringent

standards. In practice, this principle will be implemented through the issuance of permits for the use of environmental resources and emission of pollutants. Those permits should be tradable. Thus a possessor of a permit should be able to sell that permit to another subject, in accordance with the authority in charge. A second goal of economic instruments should be collection of funds to be used for environmental protection. The fees, as well as other instruments, will provide motivation for environmental protection.

69. During the process of addressing environmental problems that have built up over the years, the "polluter pays" principle will be applied with some limitations. The role of ecologic charges in this case will essentially mean the collection of funds, which in turn will be used selectively, depending on the urgency of particular tasks, to co-finance environmental protection projects. For this purpose the rates of charges and penalties will be raised by 150% and the procedure of collection will be modified in such a way which would secure receipts at the level of 5.5 billion zloty in 1991.

70. Decentralization of assessment, execution, and utilization of environmental fees is envisaged. The imposition of an environmental levy on fuels (a measure implemented or planned for implementation in some OECD countries) as a source of income to the National Fund of Environmental Protection and Water Management is being proposed. These funds are needed to co-finance national projects or local undertakings which cannot be financed through regional budgets alone. Alternative sources of the National Fund's income can be:

(a) participation in a turnover tax (in the future, the value-added tax) imposed on commodities or activities particularly harmful to the environment,

(b) subsidies from the state budget.

71. The bulk of environmental charges will result from the principle of self-financing different branches of environmental protection, like water protection, air protection, waste utilization, etc. The possibility of supporting appropriate actions by the central and local budgets during the coming years to compensate for environmental areas will be made available.

72. An exploitation charge for the access to mineral deposits will be imposed. This will differ depending on the geologic position and mining conditions of the ledge. This charge will be taken over by the state treasury, being the owner of the

country's mineral resources. After the establishment of a competitive exploration and mining market, the role of the exploitation charge will be replaced by a license fee determined at auctions. During the transitional period, exploration and documentation costs will be borne by the state budget.

73. A forest tax will be imposed on the users of forests. This tax will depend, among others, on the quality of the ecosystem, and shall replace the present profit taxes of the State Forests enterprises. Subsidies, to support activities concerned with removal of massive damages and reforestation needed by the country for environmental and economic reasons shall be provided.

74. Subsidizing environmental protection costs with public funds (e.g. budget, target funds) should be maintained. These subsidies will be used for the creation of minimum municipal infrastructure. Subsidies for the environmental protection programmes in the industrial sector (at a limited scope) will be part of the governmental programme for the change in the economy's structure.

75. The principles of subsidy provision will be changed from the present tax relaxations and preferential credits to assure maximum efficiency of those resources from the point of view of the environmental policy of the state. It is envisaged that selected banks (e.g. the presently organized Environmental Protection Bank Ltd.) will be allowed to provide preferential credits, thanks to the separation within the state budget of special means, to cover differences in interest rates.

76. Economic instruments will be initiated which do not require state budget intervention and are aimed at the creation of financial incentives for environmentally friendly changes in the economy and public attitudes. In particular, this will, among others, concern the bail money to be duly paid by those turning over commodities, substances, or packages particularly dangerous to the environment. This kind of procedure is planned to be imposed on the turnover of car batteries, dry batteries, engine oil, selected chemicals, and packing materials used for pesticides. Differentiated taxes and custom duties leading to higher taxation of commodities potentially more harmful to the environment will be developed.

77. The present penalty system for the infringement on the environment will be maintained only with reference to single abuses caused by breakdowns. Consistent abusers will be dealt with based on other sanctions established by law.

Inspection and monitoring systems

78. The establishment of a uniform and efficient system for the inspection of compliance to the environmental law, equipped with legal instruments enabling effective enforcement of duties towards the environment by their users, will be an immediate goal. The basic instruments in the hands of the environmental inspection authorities will be:

- the right to order a halt to a negligent act toward the environment within a given period;
- the right to discontinue activities abusive to environmental protection requirements;
- the duty to prevent the operation or start up of a new erected facility which does not comply with requirements of environmental protection.

79. The operation of the State Inspectorate of the Environmental Protection system (PIOS) will be adapted to the organizational and functional structure of the government administration. It is envisaged, that PIOS will be simultaneously the source of information on the state of the environment and status of its users. The information will be gathered by the state monitoring system operating under PIOS and made available to the state and local administrative entities as well as to public organizations and citizens.

80. The development of the state monitoring system embracing all elements of the environment, uniformly equipped and applying unified methods of measurement, will be continued. This system should be linked to the world monitoring network and apply measuring methodologies used within that network.

Environmental education and research

81. Dissemination of environmental education ought to be an essential part of the environmental policy. It should be regarded as a prerequisite of, and as well as a result of, progress in that policy.

82. Increasing an individual's knowledge of the natural environment and the threat to that functioning caused by the activities of individuals, social groups and economic entities will be the goal of environmental education. The concept of pollution prevention should have a prominent place in this education.

83. An essential goal of environmental education should be inspiring the emotional desire to act for the cause of environmental protection. Environmental education should become rooted in the process of upbringing. A positive and

responsible attitude toward nature should become a permanent element of values constituting human morality.

84. A programme of environmental education, addressed to a broad spectrum of the public and utilising a variety of techniques and instruments of influence, will be developed. Along with formal schooling, the ideals inciting humans' sensitivity and the sense of responsibility should be extended. Initiatives of informal organizations aimed at extension of a positive, emotional relationship to nature will be supported.

85. Research projects aimed at the implementation of sustainable development will be supported. They should identify present and future threats to the environment and human life and propose solutions together with their means of implementation.

86. General support should be rendered to research aimed at determining mechanisms that govern the function of nature and its sensitivity to degraded areas. This refers also to the investigation of the restoration of ecological balance, recultivation, and protection of nature, with particular emphasis on forests.

87. Examination of the spatial pattern of nature, including regional protection activities, will also be supported.

88. The state will economically influence research in the field of technique and technology, in particular, strengthening research important to environmental protection.

89. Polish researches should participate in international research programs devoted to environmental protection (global change, arctic research programs, etc.).

VI. INTERNATIONAL COOPERATION

Poland's participation in the resolving of regional and global environmental problems

90. Effectively tackling environmental problems in Poland is impossible without broad international cooperation. This is due to the global character of many environmental issues and transboundary pollution, international legal obligations already adopted by Poland, and also the benefits provided by international cooperation, primarily concerning exchange of know-how and technology.

91. Environmental issues are contained in about 150 international conventions and protocols, Poland being party to approximately 40 of them, as well as in numerous bilateral agreements. Poland's present international legal commitments, which affect the speed and scope of domestic environmental protection activities, are the following:

(a) commitment to the protection of the Baltic Sea waters, including the obligation to reduce 50% of the organic waste discharged into the sea, resulting from the Poland's signing of the Helsinki Convention agreement of 1974;

(b) obligation to reduce emissions of air pollutants undertaken within the Convention on Long-range Transboundary Air Pollution (Geneva, 1979) and the protocols of this Convention;

(c) commitment to rational waste management and to the introduction of low-waste or non-waste technologies, as accorded by the Declaration of UN ECE Countries signed by Poland in 1979;

(d) obligation towards nuclear safety, resulting from the Convention on Assistance in Case of Nuclear Accident or Nuclear Threat (Vienna, 1986) ratified by Poland in 1988; and

(e) commitment to nature conservation, as per: World Nature Conservation Charter adopted by the UN General Assembly in 1982, of which Poland is a party; Convention on Wetlands of International Significance, particularly as habitat for water fowl (Ramsar, 1971); Convention on World Cultural and Natural Heritage (Paris, 1972); and the Convention on International Trade in Endangered Animal and Plant Species (Washington, 1973).

92. In the coming years, the scope of Poland's legal international obligations will be broadened in connection with the ongoing ratification procedures and work on new conventions and

protocols as well as in accordance with noted tendencies in developments of international environmental law. This will refer, among others, to:

(a) not taking up production of, limiting the importation of, and use of substitutes harmful to the ozone layer, according to the Vienna Convention and the Montreal Protocol;

(b) necessity of reducing the emission of sulphur dioxide into the air by over 30% and also the necessity of reducing emissions of further substances (volatile organic substances, heavy metals);

(c) introduction of limits in the international trade of substances, equipment, and products harmful to the environment (e.g. waste, toxic and dangerous materials, contaminated food, noisy and air polluting motor vehicles, etc.) including commitments and duties determined by the Basel Convention on waste products trade and the Vienna Convention on ozone layer protection;

(d) introduction of regional bans and limitations on various activities and use of products (e.g. waste disposal in the sea, and movement of motorcars fueled with ethyl gasoline);

(e) conduct of environmental impact assessments regarding transboundary pollution;

(f) introduction of material liability for damages (including emergency) caused by transboundary pollution of air, surface water and sea water, as well as, soil pollution; and damages caused by nuclear accidents.

There is therefore a need for prior preparation to meet new international legal obligations, and also to influence the formulation of such obligations to the benefit of our country.

Poland will continue to participate in the activities of international organizations and also in the execution of international conventions and agreements. This brings a range of benefits that will:

(a) allow specification and unification of standards for the utilization of the environment and its resources;

(b) encourage the mutual exchange of information on the dangers of accidental contamination of the environment, including methods to limit this contamination, as well as procedures of joint clean up if contamination occurs;

(c) actively protect animal and plant species and their habitats threatened by extinction;

(d) facilitate the transfer of techniques and technologies friendly to the environment, and

provide easier access to modern methods of measurement and measuring equipment;

(e) provide for claims to compensation in cases of accidental pollution (to be developed in the future, when adequate legal regulations presently under elaboration, will be adopted) In case of nuclear accidents, this is even more important because Poland, not owning or operating any nuclear power plants, is still exposed to the consequences of nuclear disasters that occur beyond its border;

(f) provide an opportunity for improved economic conditions for the betterment of the state of the environment.

Frontier areas and relations with neighbours

93. The geographic position of Poland leads to transboundary water and air pollution. Polluted waters from Germany, Czechoslovakia, and the USSR are reaching our territory by the Neisse, Oder and Bug Rivers respectively, while Poland is a source of Baltic contamination, namely by the waters of the Vistula and Oder Rivers. North-western, western, and south-western winds are transporting gaseous pollutants and particulates from Germany and Czechoslovakia, but also from further West-European countries to Poland, and Scandinavia. Poland is extremely interested in the commencement of activities to develop a regional strategy for environmental protection.

94. The state of the environment of external areas close to our frontiers in Czechoslovakia, Germany, and the USSR poses a danger to Poland and therefore, the activities of our diplomatic services and environmental authorities should be intensified in order to secure Poland's interests.

95. The existing bilateral and trilateral agreements with USSR, Czechoslovakia and Germany do not regulate matters of responsibility for damages caused by transboundary pollution of accidental character. For practical reasons renegotiation of the valid agreements should not be undertaken for the reason of including clauses referring to repair of damages, but talks should be sought with the view of preparing **new special bilateral agreements which would particularly regulate problems of responsibility for damages.**

96. The existing bilateral and trilateral agreements with the USSR, Czechoslovakia and Germany do not assure environmental security for Poland either in terms of their form and content

nor their implementation pattern. They all should be renegotiated in two stages:

- first: during the period of preparation of a number of new European and global conventions regulating environmental protection, the matter of temporary programs for the improvement of the implementation of the signed agreements should be focused on. In addition, the legislative initiative on problems of responsibility for damages should be taken up;
- second: (approximately after 1992) a general revision of the agreements already signed should be undertaken in order to adjust them to the new European environmental conventions which will be introduced during 1990 and 1992.

Those renegotiations should also take into account the unification of Germany, with the newly formed Germany thus becoming party of the new agreements.

97. A more active role of local communities on both sides of the borders should be a significant element to the improvement of the environment in those areas. The state administration at the central and regional level, as well as the local self-government, should provide assistance to public environmental organizations. This assistance should consist of providing access, to all forms of information on the state of the environment and sources of pollution, and facilitate the exchange of ideas between domestic and foreign experts.

The scope and utilization of foreign assistance oriented to environmental projects

98. The time gap between the degree of advancement of undertakings to improve the environment in Poland and in Western countries provides an opportunity to develop profitable cooperation and to obtain financial support. From the point of view of those countries which are affected by pollutants from Poland, the reduction of emission at the source proves to be more effective than to mitigate the effects caused by those pollutants. This kind of cooperation can also be stimulated by opportunities to share economized raw materials and, in the future, the access to a large market for clean technologies and environmental protection installations.

99. The external aid for the protection of the environment should, first of all, be used to reduce extreme hazards to human health and nature. The initiation of processes which would ultimately

multiply our own efforts in solving priority problems should be a principle built into our general State policy.

100. The social and political changes, as well as the change of economic strategy in Poland, including a wider openness to highly developed countries, are facilitating opportunities to acquire economic assistance for environmental protection in Poland. The channels of such assistance are through the following:

(a) World Bank assistance in the form of credit (presently 18 million US dollars) and the anticipated assistance of other international finance organizations (Nordic Investment Bank, European Reconstruction and Development Bank, etc.). Credits in this form are simultaneously combined with organizational, scientific, and technical assistance;

(b) assistance provided by the declaration of the G-24 Countries announced in Brussels (so far at the level of 25 million US dollars) for environmental protection as a grant coordinated by the EC Commission; and

(c) international aid from particular countries (e.g. USA, Sweden, Finland, the Netherlands, and others) provided in connection with the declaration mentioned under (b), and also based on earlier or separate agreements.

101. The main task for the governmental bodies participating in the utilization of foreign aid from highly developed countries is the establishment of an organizational framework to manage the expenditure and efficient utilization of the funds. The targeted uses for this kind of assistance are the following:

(a) transfer of environmental protection technologies not applied within the country as yet (e.g. desulphurization and denitrification of combustion gases, utilization of toxic waste, desalinization of water, etc.) including the construction of pilot installations;

(b) promotion of domestic production of environmental protection equipment, among others through joint undertakings (joint venture); and

(c) organizational assistance, improvement of management, and training of qualified staff, including assistance in the establishment of consulting enterprises.

The regional distribution of projects, executed with the participation of foreign assistance, is as follows:

(a) Upper Silesia, the region of Rybnik, Cracow, the Copper Mining and Smelting region of Legnica—Glogow and the Baltic Sea shore belt;

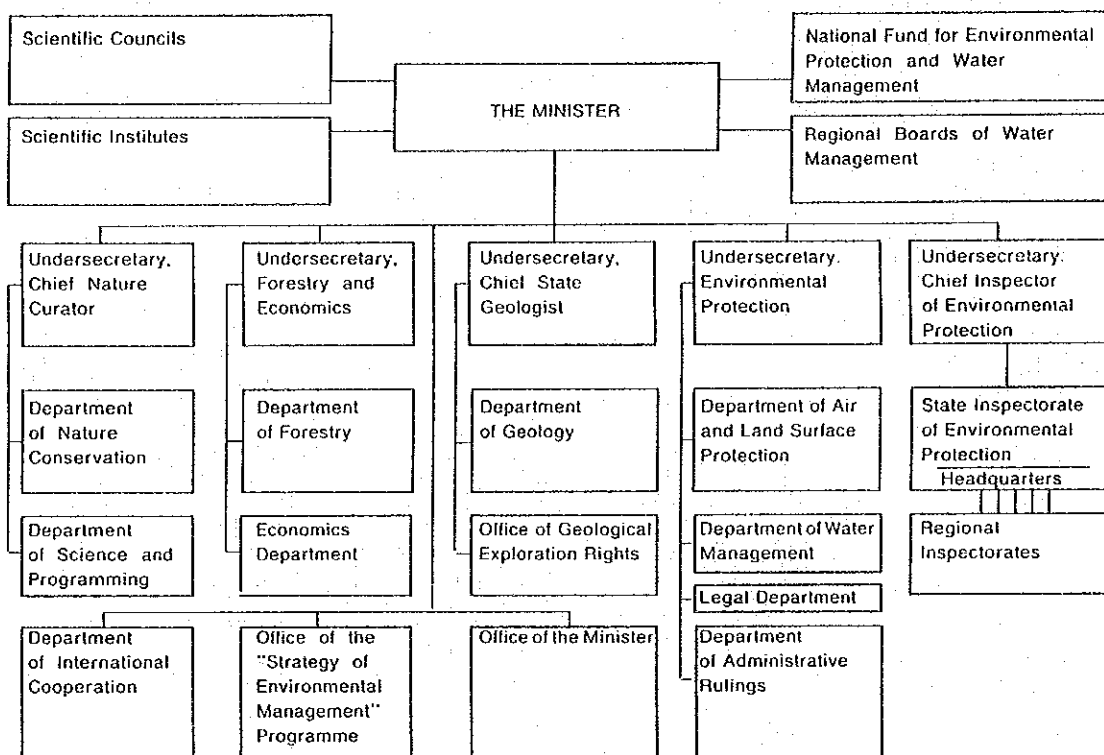
(b) areas of prominent natural value; and

(c) other areas environmentally threatened.

102. The rate of foreign assistance in the overall cost of environmental protection investments in Poland will not be large in financial terms, particularly in comparison to what Poland needs for restoring its environment. It is expected that it will not exceed several tenths of one percent. Therefore, the methods and forms of utilization of assistance should be an example and model for solutions to be implemented by our own means. The assessment of the feasibility of multiplication and distribution of acquired technologies, equipment and instruments, as well as know-how and experience, are to be regarded as the basic criteria for the selection of projects for implementation.

環境保護省組織図

Organizational chart of the Ministry of Environmental Protection, Natural Resources and Forestry



対「ポ」環境保護分野海外援助

Foreign assistance to Poland in the field of environmental protection in 1990-1992

Country/ Institution	Amount of assistance (US\$ millions)	Number of projects	Scope of main projects
GRANTS			
EEC			
PHARE 1 Programme	25.5	12	Technology transfer, measurement devices, training of specialists.
PHARE 2 Programme	43.7	18	Upper Silesia Project (18 million USD), toxic waste disposal, ecological foundation.
USA	35.7	8	Assistance in air protection measures in Cracow.
Sweden	31.5	14	Production of fluidized bed boilers; Sewage treatment plants.
Germany	27.9	1	District heating system in Gliwice.
Denmark	9.3	31	Sewage treatment plants, Waste utilization.
Japan	6.2	4	Flue gas desulphurisation, Desalinization of mine effluents.
The Netherlands	5.8	16	Low-NO _x burners; master plan for Bytom; particulate emissions control in Laziska smelter.
Finland	2.4 "debt-for-nature" swap	4	Waste utilization; production of pre-insulated pipes.
Norway	2.1	11	GRID Centre in Warsaw, desalinization of mine effluents.
Belgium	4.0	14	Monitoring, waste utilization, training.
Switzerland			
United Kingdom			
Total grants	194.1	133	
LOANS			
World Bank	18.0	1	Strategy of environmental management (four components)
Italy	15.5	1	Waste utilisation in Warsaw
Total of loans	33.5	2	

2.2 The energy situation in Hungary

2.2.1 Energy balance

This section summarizes important energy data of Hungary based on the 1989 situation (unfortunately 1990 data have not been published until now) and more detailed power data for 1990.

General energy data (1989):Sources:

Indigenous production	682.7 PJ
Import	730.0 PJ
From the reduction of storage	7.5 PJ
Total	1420.2 PJ

Breakdown of indigenous production by fuels:

Coal	221.7 PJ
Oil	78.2 PJ
Natural gas	197.7 PJ
Liquefied gas	11.1 PJ
Hydro-power	1.6 PJ
Nuclear power	138.9 PJ
Firewood	13.5 PJ
Other base energy carriers (incl. gasolin)	20.0 PJ
Total	682.7 PJ

Breakdown of import by fuels:

Coal	52.5 PJ
Oil	259.2 PJ
Natural gas	202.7 PJ
Other energy carriers	104.8 PJ
Electricity	110.8 PJ
Total	730.0 PJ

Total domestic energy use excluding export and change in storing: 1316.3 PJ

Breakdown of domestic consumption [PJ]:

Mining	40.7
Power industry	8.2
Metallurgy	143.8
Engineering industries	49.6
Building materials industry	56.6
Chemical industry	180.6
Light industry	42.2
Other industries	1.7
Food processing	57.7
Construction industry	19.9
Agriculture, forestry and water management	98.6
Transportation	71.3
Other	143.2
Residential sector	402.2
Total	1316.3

Electricity related data (1990):

Sources of power [MWh]

MVMT power plant	27 462 585 MWh
Power from industrial cooperation and from independent sources	947 804 MWh
Power from import	11 269 971 MWh
Total	39 680 360 MWh

MVMT power plants	27 462 585
Power from industrial cooperation	599 682
Power from import	11 269 971
Power from independent sources	348 122
Total	39 680 360

Breakdown of imports:

Import from Austria:	298 359 MWh
Import from Czecho-Slovakia:	777 708 MWh
Import from Soviet Union:	12 169 820 MWh
Import from Yugoslavia:	62 798 MWh
Total import:	13 308 685 MWh

Breakdown of exports:

Export to Austria:	167 121 MWh
Export to Czecho-Slovakia:	1 506 597 MWh
Export to Romania:	61 055 MWh
Export to Soviet Union:	10 091 MWh
Export to Yugoslavia:	293 850 MWh
Total export:	2 038 714 MWh

Consumption:

Self-consumption of power plants:	2 541 615 MWh
Losses of the network:	4 015 131 MWh
Net inland consumption (excluding losses):	32 981 193 MWh
Local cooperation:	142 421 MWh

Total: 39 680 360 MWh

Breakdown of industrial consumption:

Mining	1 351 175 MWh
Power industry	329 504 MWh
Metallurgy	3 520 055 MWh
Mechanical engineering industry	539 332 MWh
Transportation vehicle production	368 086 MWh
Electrical machinery production	228 256 MWh
Telecommunication and vacuum engineering industry	279 014 MWh
Precision instrument production	102 445 MWh
Metalware production	232 686 MWh
Building material production	1 145 135 MWh
Chemical industry	3 446 805 MWh
Wood processing	198 825 MWh
Paper industry	460 586 MWh
Printing industry	81 866 MWh
Textile industry	645 473 MWh
Leather and shoe industry	98 685 MWh
Garments industry	66 446 MWh
Handicraft and local small industries	21 897 MWh
Other industries	51 795 MWh
Food processing	1 635 049 MWh

Total 14 803 115 MWh

Breakdown of non-industrial consumption:

Commercial companies for means of production	82 070 MWh
Construction companies	363 466 MWh
Agriculture	1 766 736 MWh
Forestry	170 935 MWh
Water management	908 825 MWh
Communication, transportation	1 685 406 MWh
Commercial companies	858 153 MWh
Foreign trade companies	40 921 MWh
Local export	142 421 MWh
Residential consumption	9 188 665 MWh
Public lighting	616 963 MWh
Public buildings	1 611 348 MWh
Other consumers	864 590 MWh

Total 18 320 499 MWh

**Total power consumption in Hungary
excluding losses 33 123 614 MWh**

2.2.2 Power generation

Power is generated in Hungary by

- power plants belonging directly to MVMT (the Hungarian Electricity Board)
- power plants belonging to MVMT's power supply companies
- industrial CHP plants cooperating with the national network
- (small) non-cooperating power plants owned by industries.

The built-in capacity of the Hungarian power system is 7 184.2 MW. Its sources are as follows:

Fossil power plants	5 164.9 MW
Nuclear power plant	1 760.0 MW
Hydro-power stations	47.8 MW
Industrial power stations	211.5 MW
Total available capacity	7 184.2 MW

MVMT will be reorganized in 1992, shifting many responsibilities to the power distribution companies. The successor of MVMT will probably own and operate the biggest power plants and the national high-voltage transmission grid, while the local distributors will operate the rest of the system. Some kind of privatization will start, too.

(C) その他

収集資料

(ポーランド)

- ・ Polish Energy '92 Ministry of Industry and Trade
- ・ Environment in Poland Ministry of Environmental Protection, Natural Resources and Forestry
- ・ Issues and Solutions
- ・ The State of The Environment in Poland Damage and Remedy Ministry of Environmental Protection, Natural Resources and Forestry
- ・ National Environmental Policy of Poland Ministry of Environmental Protection, Natural Resources and Forestry
- ・ Problems of Water Protection in Poland Ministry of Environmental Protection, Natural Resources and Forestry
- ・ Foundation Progress and Business Basic Information Progress and Business Foundation
- ・ Mazovian Refinery and Petrochemical Works 会社案内 Mazovian Refinery and Petrochemical Works
- ・ Assistance in Upgrading Management and Modernizing Engineering of Agricultural Machinery Industry United Nations Industrial Development Organization (UNIDO Vienna)
- ・ List of Projects in Poland 不明
- ・ Restructuring Proposals for the Polish Energy Sector UNDP/W.B.

(ハンガリー)

- ・ EGI Contracting and Engineering EGI Contracting/Engineering Hungary
- ・ The Heller System EGI Contracting/Engineering Hungary
- ・ The Energy Situation in Hungary EGI Contracting/Engineering Hungary
- ・ Budapest Chemical Works (製品案内) Budapest Chemical Works
- ・ Budapest Chemical Works Intermediates Budapest Chemical Works
- ・ Scope of Activity of Budapest Chemical Works Budapest Chemical Works
- ・ Improvement and Rehabilitation of Dimag Stock Corporation Steel Plant MISKOLC, Hungary Kobe Steel.LTD. (UNIDO CONTRACT NO. 90/187/CW)
- ・ Investigation and improvement of Environmental Impact of Iron and Steel Industry in Sajo River Valley Area UNIDO
- ・ Ordinance of The Ministry of Environmental Protection Natural Resources and Forestry of 12th February 1990 on Protection of Air Against Pollution IEA (IEA/GB(91)9)
- ・ An Instruction of the Minister of Environmental Protection, Natural Resources and Forestry of 5 November 1991, on Water Classification and the Requirements to Be Met by Waste Water Discharged into Waters and Soil

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