
INDUSTRIAL POLICY AND ENVIRONMENT IN SERBIA

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ABSTRACT

In the paper are elaborates the problems of industrial development polices on the Serbia in the last time, in the context of resource use and environmental protection. There are recognized possible environmental consequences of industrial development perspectives in the relation to the Spatial plan of Serbia and to the document "Development strategy of the Republic of Serbia until 2010. with prospects until 2020.". Unsustainability trends and process are identified, as follows: nonefficiency (excessive) using nonrenewal resource in the industry (energy resources, mineral resources, water etc); environmental degradation and quality of locations and development ecologically highly risk industries (chemical industry, petrochemical industry, oil refinery, ferrous and non-ferrous metalurgy etc) and treatment (deposit/stocking) of industrial waste. The planned environmental protection measures are mostly in the sphere of previous effects revitalisation or protection, without preventive actions concerning future development. The existing legal acts in the domain of environmental protection and development regulate the duties and responsibilities of economic actors rather insufficiently. For example, correspondent to the Law on foreign investments in FRY, the import of equipment and other basic production technologies, which represent the foreign investor's deposit is tax-free. From the environmental point of view, a free technology transfer could have negative consequences. In the same Law, the agreement on foreign investment does not contain propositions on environmental protection, and the agreement on founding an enterprise contains only a general proposition on the environmental protection. According to the federal Law, in the concession agreement there are no propositions on the conditions of environmental protection. There are recognized the needs for application/introduction of the politics of sustainable industrial development in Serbia, in the regard with EU Programme on the environment and sustainable (industrial) development.

Key words: low, organization, environmental control, industrial policy

INTRODUCTION

Industry is one of the most endangering sources of the environmental quality, even than when the production process indicates minimal polluting emissions. The ecological impact

of industry, beside the polluting emissions and waste disposal is reflected in the usage of energy sources and raw materials. The ecological consequences of industrial production might be quite essential, especially because of the use of non-renewable resources, emissions of damaging materials and environmental risks.

Analysing some previous trends of industrial development, planning-developmental perspectives and development strategies of particular sectors, it might be assumed that in the oncoming period, in certain parts of the Republic of Serbia, an increase of ecological risk is expected.

ENVIRONMENTAL ASPECTS OF SERBIAN INDUSTRIAL DEVELOPMENT

Although there has been an industrial decrease and stagnation, during the 80s, industry is the leading production activity in Serbia, performing a dominant part in the GDP, in the employment ratio and the investments in the production funds. From the environmental and resource usage standpoint, the extensive character of the industrial development is also reflected in reproducing the present unfavourable industrial structure and the employment of outdated technologies. Industrial development, until the 80s, shows an investment intensive character, bound by the choice of some dominant branch structures: black (ferrous metallurgy, energy, non-ferrous metallurgy, metal processing, production and processing of non-metals, coal production, etc. Since 1990, the industrial production in Serbia has witnessed a tremendous decrease. Thus, in 1998. the production plunged to 35% of the 1990's production. Consequently, the industrial employment decreased (from 1 035 000 in 1990. to 760 091 in 1998.), and therefore the allotment of this activity in the overall economic employment was 41.2 % in 1998. and 31.5% of the GDP. The industrial assets are used only with 31%, however with substantial branch differences. The above average level of assets usage is perceivable in the resource-intensive branches such as raw materials, energy and intermediary production, whereas in the processing sector it is only average. Such a trend in the utilisation of assets is unacceptable from the viewpoint of sustainable industrial development.

From the environmental and spatial protection standpoint, some main industrial problems in Serbia are: irrational usage of existing industrial locations and equipment; materially intensive production character with an immense utilisation of raw materials, energy, water, and land. Furthermore, there are massive consequences on the environmental quality; conflicts with the environment and particular settlements structures; exceeded emissions of pollutants in the air, water and soil; endangered biodiversity; industrial waste, agricultural, forest and construction land degradation; negative impacts on the life quality, housing and health, etc. In Serbia's industry dominates raw material, energy and intermediary production sector: production of electric energy, coal, oil and oil derivatives, ferrous and non-ferrous metallurgy, production and processing of non-metals, building materials, basic chemical industry, etc. Because of the outdated technology in numerous production branches, Serbia's industry is very extensive in terms of energy sources and resources usage, often very wasteful, with a quite costly participation of energy, raw materials and water in the produce's costs per unit [1].

On the basis of the met state of the art of the environment in Serbia (1990), according to the "EU Programme on the environment and sustainable development" [2], it is estimated that the environmental quality in the Danube Basin, Vojvodina, Sava valley and Eastern Serbia are among the most endangered in Europe. Bearing in mind that Yugoslavia is a signatory country of the Declaration on Sustainable Development (1992.) imposes several questions: Has the planned industrial development of these areas accepted devised environmental demands? Did this encompass respective environmental aspects in governing the industrial

spatial development in our regulations on the construction of investment facilities, foreign investments, free zones, and concessions?

The existing legal acts in the domain of environmental protection and development regulate the duties and responsibilities of economic actors rather insufficiently. For example, correspondent to the Law on foreign investments in FRY [3], the import of equipment and other basic production means, which represent the foreign investor's deposit is tax-free. From the environmental point of view, a free technology transfer could have negative consequences. In the same Law, the agreement on foreign investment does not contain propositions on environmental protection, and the agreement on founding an enterprise contains only a general proposition on the environmental protection. The consent for foreign investment is issued by the Ministry of economic relations with foreign countries, with no obligation to consult the responsible Republic's department for environmental protection. With the Law on foreign investments in FRY (1996.) [4], it is prepared for the foreign investor to acquire a concession for facility, plant or plant section construction, utilisation of natural or generally used goods under the condition not to endanger the environment. According to the federal Law, in the concession agreement there are no propositions on the conditions of environmental protection.

During the NATO aggression, many industrial assets have been destroyed or damaged. Especially heavily damaged were sections of the chemical industry, oil complexes, metal-processing complexes, power plants and power installations. During the aggression, in Serbia, some 25% of the overall industrial capacity were damaged. According to the accessible data [5], in the bombardment, some 80 industrial enterprises, employing 150 000 workers were damaged. By destroying capital equipment of the petrol-chemical, chemical and oil complexes, a considerable share of highly hazardous and dangerous substances was released in all environmental mediums.

PLANNED DEVELOPMENT AND ECOLOGIC CONSEQUENCES OF INDUSTRY IN SERBIA

In the Spatial Plan of the Republic of Serbia [6] and "The development strategy of the Republic of Serbia" [7], the development and concentration of immovable industry on current industrial sites has been foreseen:

- Revitalisation of black metallurgy capacities in Smederevo;
- Structural transformation and development of non-ferrous metallurgy and copper and tinted processing in Bor and Majdanpek, Kosovska Mitrovica, Sevojno, Jagodina and Podrinje;
- Development of energetics, production and processing of coal (lignite) and oil (on the territory of Obrenovac-Lazarevac, Kostolac, Kosovo basin, Ibar area, Kovin, etc.);
- Development of basic inorganic chemistry in Prahovo, Novi Sad, Sabac, Krusevac, Cacak, Loznica, Lucani, Kosovska Mitrovica and other minor centres and basic organic chemistry in Pancevo, Novi Sad, Beograd, Krusevac, Subotica, etc.)
- Development of metal processing industry, especially the automatization equipment production in the domain of electric joints, electric machines, processing equipment, goods (freight) and special vehicles, vessels, motors, measuring and precise instruments;
- Exploitation and processing of non-metals (in the area of Ibar and Kopaonik, Gornji Milanovac, Mladenovac, Arandjelovac, Beocin, V. Popovac, Kraljevo, Uzice, etc.)
- Development of food processing industry;
- Production of building materials (the area of Vojvodina);
- Sand and gravel extraction (several sites in the Danube Basin and Morava Basin), etc.;

Keeping the present industrial structure and sustaining the industrial development trend in Serbia, from the environmental and resources use standpoint might have following consequences:

1. further excessive use of non-renewable or partially renewable resources – fossil fuels (coal in Kosovo Basin, Kolubara Basin, Kostolac Basin and Ibar Basin, oil in Stig), copper (RTB Bor, Majdanpek), non-metals, gravel and sand, building stone, water, etc.;
2. ineffective use of non/renewable resources with global ineffectiveness of production factors;
3. Development of environmentally highly hazardous industrial capacities and branches: chemical industry (Belgrade, Pancevo, Novi Sad, Sabac, Subotica, Krusevac, Kosovska Mitrovica, Cacak, Prahovo, Lucani, etc.), production and processing of oil and oil derivatives (Novi Sad, Pancevo, and Belgrade), ferrous metallurgy (forge in Smederevo), coal and electric energy production in Kosovo's power plants, Power plants "Kostolac A and B, Power plant NT", Power Plant "Kolubara" and tinted metallurgy complexes (RTB "Bor"), etc.;
4. Industrial development on the basis of imported (non-renewable) resources: black metallurgy (around 3 million tons of imported iron ore), refineries (annual oil refining volume in refineries of Belgrade, Novi Sad and Pancevo ranges from 3.34 million to 5.35 million tons, out of which 2.04 million tons are imported [8], chemical industry, non-metal processing, etc.;
5. Development of locationally and techno-economically demanding industries, extensively using huge quantities of water, energy, massive land areas, a large scope of freight transport;
6. Increasing problems of industrial waste deposition etc.

According to the Spatial Plan of Serbia [6], in the planned state of the environment, most of settlements and Serbia's areas are classified as category IV and V in terms of polluted sites (a better quality environmental zone). The exception is Pancevo, Bor, Sabac, Kosovska Mitrovica, Subotica, Baric, Krusevac, Loznica, Lucani, which equate with considerably polluted locations of the II category. To the locations of the category II belong Obrenovac, Kostolac, Prahovo, Kikinda and settlements in the Kolubara basin. The planned environmental protection measures are mostly in the sphere of previous effects revitalisation or protection, without preventive actions concerning future development.

If the current trend of global ineffectiveness of production factors will persist, concurrently with ineffective use of natural resources in industry and the realisation of proposed development policies in this field, very environmentally unfavourable effects might be expected in future. Furthermore, some negative ecological consequences are foreseeable in respect to the planned development strategies and perspectives, economically uncertain development results and outcomes, together with socially unacceptable spatial resource usage. Therefore, it is essential to define a strategy of sustainable industrial development within the spatial planning.

POSSIBILITIES OF SUSTAINABLE INDUSTRIAL DEVELOPMENT IN SERBIA

Objectives and approach

Main objectives in planning the sustainable industrial development are a) economic growth and development by respecting local ecological criteria and capacities (industrial restructuring), b) enhancing the life quality, c) protection of environmental resources.

The general objective of sustainable industrial development is the development of economically profitable production, with products which are environmentally friendly (i.e. fundamental environmental sector restructuring). Furthermore, the decrease of polluting substances in air, water and soil, waste decrease, efficient use of (non) renewable resources, suspension of certain production types would meet this end. General strategic objectives encompass: employment increase, production restructuring leading towards a bigger share of processing industries, development of small enterprises (as “regional catalysts” of development), development and application of more advanced technologies, co-ordinated territorial distribution of industry (in urban and regional context), rational use of non-renewable resources, a more efficient use of renewable resources, decrease of polluting emissions from industry, minimisation of industrial waste, substitution of certain resources, etc. **The strategy of industrial eco-restructuring** entails the decrease of the relative importance of particular branches of the basic and intermediary sector (e.g. energetics, ferrous and non-ferrous metallurgy, non-metals, production of building materials, etc.). Furthermore, it entails the increase of the importance of materially intensive branches, high-tech production, with the revitalisation of existent plants effects upon the environment. The sustainable industrial development adopts the application of the preventive approach: involvement of the spatio-environmental criteria, optimisation of the material input use, minimisation of polluting substances, restructuring of the production pattern towards an environmentally acceptable technologies, etc. This scenario leads towards the decentralisation and decrease of global developmental disparities, development of small urban centres, balance provision between socio-economic and spatio-environmental objectives, a more rational land use, better infrastructural and communication access and an overall increase of the life quality. The initiated processes of socio-economic transformation with attracting portfolio and direct foreign investments might have significant environmental consequences upon the Republic’s territory, and therefore a sustainable industrial development strategy is indispensable.

Sustainable industrial development policy

The aim of the industrial policy is the creation of conditions for the development of an innovative and market competitive industrial sector, which should provide an environmentally sustainable production. In planning the sustainable development, the industry ought not to perform as an environmental problem, but to act as an active party in solving developmental problems. Sustainable industrial development entails the definition of a framework of the general and sector industrial policy. The first is directed at a better use of production factors and the creation of a unanimous ambience for all production branches, and the second has a sector and territorially bound character.

For the sustainable industrial development, the synchronisation of various elements is indispensable: [9] location; better use of technology; control of polluting emissions; management of the industrial waste and the prevention of its creation; resource management; industrial risk management.

The sustainable industrial development policy ought to be directed at achieving the balance between the short-term profit of the enterprises and the long-term effects for the society. This encompasses [10]: (a) Definition of explicit objectives and environmental protection level in this activity; (b) the application of innovations in the industrial strategy, towards enabling an “environmentally friendly” development; (c) the application of the “integral pollution control” concept in enterprises; (d) a clear responsibility concept for environmental damages; (e) emission standardisation for all industrial sectors, depending on the technology type, etc.; (f) development and use of “clean” technologies; (g) rational

energy use in industry; (h) fiscal reductions and support for enterprises which acknowledge environmental demands in practice.

The sustainable industrial development policy, which treats the market competition and the environmental protection as a unanimous process, embodies the application of an integral measure package: (a) dialogue with the industry and its associations (chambers, consortiums, etc.); (b) industry distribution management, enhancement of spatial and strategic planning; (c) definition of the role, duties and rights of involved actors; (d) usage of environmental policy instruments and especially the usage of economic instruments; (e) governmental support of the sustainable industrial development concept, but also of responsible ministries, encompassing the financial, fiscal and other assistance.

CONCLUSION

Based on the former industrial development trend, planned development prognosis and further endangering of the environmental quality in Serbia, it is estimated that an approach change in spatial management, environment protection and resource use is necessary. Sustainable industrial development implies the definition of development managing modes of this activity (on the national, regional and local and sector level), concerted with the principles of sustainable development. The environmental management of industrial development is not possible without envisaging the impact of plans and projects upon the environment, socio-economic segments, and the identification of duties and responsibilities regarding the environment. The definition of a sustainable development strategy is necessary based on: (a) sustainable industrial development strategy, (b) strategy of non-renewable and renewable resources use, (c) integral spatial planning, (d) principles of democratic spatial planning, (e) productive eco-restructuring of the existent industry with regard to eco-efficiency of material inputs, (f) public participation in planning and decision-making on industrial development /location, etc.

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