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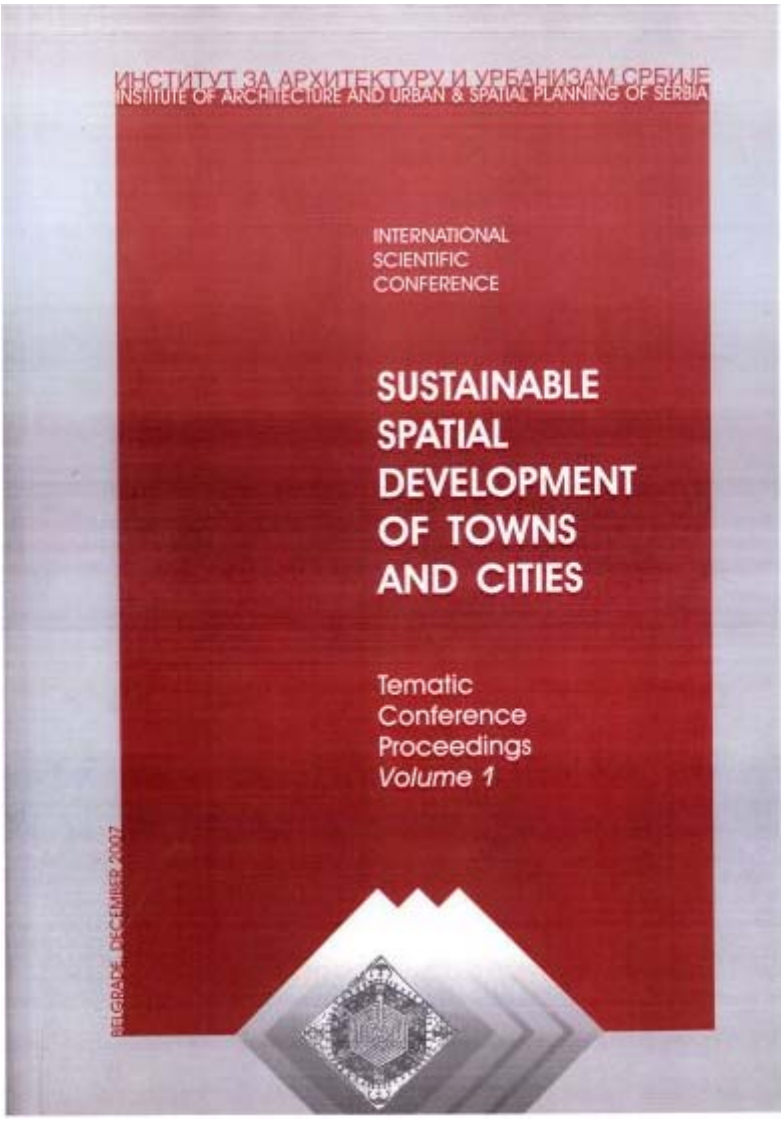

THE INFLUENCE OF THE EUROPEAN POLICIES ON POSSIBILITIES OF SUSTAINABLE INDUSTRIAL DEVELOPMENT IN SERBIAN CITIES

Slavka Zekovic [1]

Abstract

This work discusses the possible influences of industrial policy, the EU mining and energy supply policies on the restructuring and sustainable development of these sectors in Serbia, in the period of transition to a market-oriented economy. It points out the necessity to incorporate strategic goals of development of the European area and its economy, by the principles of competitiveness, innovation, entrepreneurship, sustainable development, into the policy of spatial industrial development of the cities throughout Serbia.

In order to solve the main problems of long-term industrial development in Serbian towns, it is necessary to adjust the industrial policy with the policy of territorial development of this activity in order to increase the competitiveness. From the aspect of the new policy of competitiveness regarding the European area, it is advised to maximize the ever-growing involvement of the knowledge-based economy, innovations and entrepreneurship or, the so-called 'learning economy', as well as a 'low-carbon economy'. Apart from a sustainable development of the industry, a special role is assigned to the introduction of 'low-carbon sources' into the corporate business strategy, i.e. a reduction of the carbon consumption in industrial activities, by way of applying the 'low carbon criteria' in the decision making process regarding business development issues. Therefore, this essay illustrates the necessity of studying and harmonizing the planning of sustainable spatial development of Serbian industry in accordance with the European policy as defined in the Lisbon Agenda, the Territorial Agenda of EU, the Program of Competitiveness in EU 2007-2012, and by the mining and energy supply policy of the EU. It is essential to explore the ways of including the policy priorities and instruments into spatial organization strategy, into spatial planning and urban policy as well as into some sector policies in Serbia. Dynamic changes in spatial structure of towns and wider areas are in the focus of attention, as well as, the development of new economic poles in urban areas, new locational- spatial forms of industry and economic activity. It is considered that the processes of globalization and market mechanisms have led to the 'break down' of urban structures into numerous specialized and fragmented localities, by way of developing economic clusters and other activities dispersed in a populated structure. The development of new economic poles in towns is a consequence of activating new localities and changing the present territorial organization under the effect of multinational companies and the development of 'knowledge-based' economic activities. In some big towns in Serbia (Belgrade, Novi Sad) the new economic poles – new industrial, commercial, entrepreneurial

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zones developed systematically or spontaneously in the suburban areas (along highways and main roads) have a major role in spatial development of economic activities and in the planning of territorial organization of certain areas.

Key words are: industrial policy, sustainable development, spatial-planning policy, new economic poles, town development

INTRODUCTION

New European policies in the fields of industry, mining, energy supply and spatial development should have an important role in the design of a new phase and development policy of these above-mentioned sectors in Serbia, as well as in the urban and spatial-planning policies at all levels. The policy of economic and social development based on new knowledge, innovation, entrepreneurship, economic efficiency and the principles of sustainable development, presents a new paradigm of territorial development. Harmonizing the EU strategic goals with the industrial (and mining) and energy supply policies and instruments is a key factor for European competitiveness and economic growth, i.e. for competitiveness of individual areas.

Environmental protection as a strategic EU goal, in the process of its expanding towards the East, puts certain requirements in front of candidate countries and all potential candidates, to focus, among other things, their attention on social, regional, environmental and spatial consequences of restructuring the industries and mines i.e. to their new phase of development based on sustainable principles. In this context, all new possibilities and general directions for the restructuring and development of industry and mining should be explored. In order to develop the competitiveness in the economy and society, it is necessary to improve the industrial competitiveness as the basis for a sustainable development of the EU strategy. Knowledge, innovations and entrepreneurship are the key elements for achieving the sustainable competitiveness.

One of the important links in coordinating the economic, development, industrial and spatial development policies of Serbia with the EU strategic principles, in the following period, is the planning of sustainable spatial and urban development. In the transition of the present economic system towards a market-oriented economy, the planning of industrial development is not only to neutralize basic conflicts, to increase the efficiency and maximize general welfare, but also to facilitate competitive and eco-friendly industries and sustainable development. The main reason for this is the need to join the EU in the future. Membership in the EU implies certain obligations for the candidate countries regarding industrial and social cohesion, based on the principles of sustainable development and regional cooperation as a strategic frame for integral development. This basically refers to defining and managing of development policies in the field of industry, mining, spatial development, energy supply, environmental protection, infrastructure, etc., according to the principles of sustainable development. One of the issues is how to coordinate these policies with a large number of standards, especially those related to sustainable industrial development policy.

In the present transitional and development phase, it is necessary to start adjustment of development, spatial and economic policy with the European standards and requirements for

EU membership, in order to create the preconditions for efficient planning, functioning and competitiveness of our territory and industrial sector (including mining industry). The process of transition in industrial sectors in Serbia has been taking place since the end of 2006 without a verified development strategy. In the field of strategic industrial development planning in Serbia, the following documents are relevant: "Serbia's National strategy of Industrial Development 2007-2012" (adopted at the end of 2006), „Serbia's Development Strategy for Small and Medium Enterprises and Entrepreneurship by 2008" and „The Spatial plan of the Republic of Serbia" (1996). Having in mind that the aim of our country is to join the EU, and thus in accordance with highly-defined terms, it is necessary for a candidate country to meet certain conditions prior to entering the EU. Harmonization implies coordinating the industrial, mining and energy supply policies with EU policy in these segments, based on principles of competitiveness and sustainability. This process has its territorial aspect as well, which can be seen in dynamic changes of the spatial structure of towns and surrounding areas, the development of new economic poles in urban areas, new locational-spatial forms of industry and economic activities.

1. NEW EU INDUSTRIAL POLICY AND ITS HARMONIZATION WITH THE SPATIAL INDUSTRIAL DEVELOPMENT IN SERBIAN TOWNS

The frameworks for new industrial/economic EU policy have been adopted in Lisbon, in 2000. The elements of the new industrial policy and development strategy of EU are based on industrial competitiveness founded on knowledge, innovations and entrepreneurship. Accordingly, the role of industrial policy is significantly changing. The most important goal in the following period is competitiveness, i.e. the ability of the economy to provide a high and growing standard of living, as well as high rates of employment. Achieving industrial competitiveness that is founded on knowledge, innovations and entrepreneurship presents the core of EU sustainable development strategy. The main target of the industrial policy is the development of potentials for EU expansion, and the main protagonists are small and medium enterprises, with their clusters and innovations. The major elements of the Lisbon Agenda are: (a) vital sustainable economic development and stimulation of planned growth by applying adaptable combined macro-economic policy; (b) preparation for transition towards a knowledge-based economy (industry) and society, by defining the appropriate policies which favour an information-oriented society, and research and development; (c) coordination of phases of the structural reforms, in order to achieve competitiveness and innovation in conditions of complex markets; (d) modernization of European society, by way of investing in people and their education.

The role of EU industrial policy as a supranational policy is to: (a) establish a predictable legal framework for the efficient functioning of industry in order to prevent the risk of wasting resources or blocking entrepreneurial initiative; (b) to ensure the conditions for industrial development, since it is the most important activity for the realization of the EU concurrency potentials; availability of technology, managerial skills, skilled work force, entrepreneurship, financial potentials and other factors that together make a competitive and business environment, should be in the focus of activity of industrial policy creators; (c) to provide framework, institutions and instruments necessary for the business environment; (e) to provide a socio-economic and spatial cohesion.

The enterprises have great responsibility in realizing their competitiveness, as well as in taking on responsibility for the realization of general social interests, like, for instance, helping to fulfill environmental and social priorities. Small and medium enterprises are the axis of European industry, since they participate with 2/3 in total employment, around 70% in added value, and with 13% in import of the EU, thus stimulating competition and forcing big companies to advance their efficiency and innovative activities (Savic, Lj., Zekovic S., 2004). Research and development policy, knowledge and innovation are essential for sophisticated industries. A very important task of the industrial policy is to stimulate innovative activities and to invest in human resources in order to efficiently utilize and diffuse knowledge. This means that supporting the formation of innovational clusters will be top priority. The formation of a sustainable production structure is the key to industrial productivity growth. The key elements for achieving these aims are: improving the ecological efficiency in the utilization of resources and increased usage of by-products; strengthening recycling industry market possibilities; encouraging the development of clean technologies; implementing ecological management with special regard to the specific characteristics of small and medium enterprises.

The Lisbon Agenda points out the need for restructuring the enterprises in the countries of Eastern and Southeastern Europe. This process is especially painful in the countries in transition. Countries in transition show no need for industrial policy coordination. This is partly a consequence of the development of the regional market and intraregional trade, as the initial forms of unification. The above-mentioned processes are quite alarming because of the planning processes in transitional countries, and because of the further falling behind of the developed EU countries. According to Hare P., Hughes G. (1992), the expansion of the EU to the East opens up potential discrepancies due to the loss of one part of the South-eastern European market, because the liberalization of export trade and enlargement of the scope of economy in these countries has had an influence on certain changes in EU competitiveness. Entrepreneurship and small and medium enterprises have a lesser growth in candidate countries for the membership in the EU. Small and medium enterprises are usually located in the border regions in these countries due to lower costs of production, lower cost of local material input (raw materials, energy, etc.) and cheaper skilled work force. As a solution for the possible negative effects on the EU industrial policy, the industrial leaders and politicians are opposed to moving the European industrial production outside the EU because of cheaper labour, lower social costs and regulative flexibility in East Europe. The EU Committee (2004) has published a document in which it estimates the competitiveness of the European industry and the risk rate of deindustrialization, and suggests special solutions. By dislocating a part of EU industry into the industrial centres of Eastern Europe, the EU Committee removes industrial competitiveness to the extended part of the Union, which, from the point of industrial, global and territorial aspects, opens up new questions.

The candidate countries benefit greatly from the transfer of technology, organizational and managerial knowledge and skills, as well as from modern institutional solutions, which establish the preconditions for their gradual moving towards leading industrial countries. Member states of the EU have profited as well from using various benefits when investing in these countries (highly skilled and relatively cheap labour, conquering new markets, eliminating duty barriers, access to new resources, etc.). By accepting the joint EU industrial

policy, in a short-term period, could have very negative business effects for the enterprises of new EU member-countries. Therefore, the EU industrial policy in the transitional period must help these countries to alleviate and overcome many serious problems in the integration of their industries into the EU industrial area. The achieved European values should be alleviated by establishing an effective implementation of the industrial spatial development policy in Serbia.

Membership in the EU implies acceptance of the existence of a supranational industrial policy, which can significantly narrow the policies of member-states, limiting their efficiency due to the complex relations within the EU itself. In the present phase of transition and development, it is necessary to begin with the harmonization of our development, spatial and economic policy and regulations with the requirements for membership, in order to provide preconditions for efficient planning, functioning and the competitiveness of our territory. In the field of planning the strategic industrial development in Serbia, the following documents are relevant: Serbia's National Strategy of Economic Development 2007-2012" , „Serbia's development strategy for small and medium enterprises and entrepreneurship by 2008", „Serbia's National strategy for the integration of SCG into the European Union" (2005) and „The Spatial plan of the Republic of Serbia". These documents, (except for Spatial plan of the RS) do not include or only mention in some fragments the field of spatial development, with few comments on sustainable industrial development (in Spatial plan of the RS). Such a situation poses a question on how to overcome inefficiency in the industrial sector, and a drastic fall in all parameters of industrial growth, and how to overcome the necessity of restructuring the sector and establishing new industrial policy, as well as how to establish the policy of territorial development of this activity, in order to maximize competitiveness.

In order to avoid the further falling behind the EU countries and to overcome developing problems in Serbia (including its industry) in the period of transition, it is necessary to begin with the harmonization of the relevant regulations with our official industrial development strategies based on sustainability. It is going to be a difficult process, since, apart from solving the problems that EU industry policy creators are facing, there are still many problems caused by our previous inefficient industrial development such as: structure transformation, improvement of technical-technological levels, achieving higher efficiency, lower unemployment, ecological restructuring, etc. While the EU has started its transition of industrial development towards knowledge-oriented activities and branches, Serbia has started the transition of its economic system towards a market-oriented industry. This opens complex issues of how to approach and to comply with the EU industrial policy in planning industrial development and locations, in the conditions of a necessary 'double jump transition' (of industry) in Serbia: (1) towards a market-oriented industry, by raising efficiency (economic, ecological, energy, eco-efficiency, etc.), by development of 'low-carbon' economy; (2) towards the development of 'knowledge-oriented' industry and other economic activities. Sectors with no future should be defined; their capacities should be shut down, as well as the sectors with a future but under the influence of negative trends and which need long-term protection. Protection of the vulnerable also implies defining those industries which have a strategic importance for the country and individual region. According to the EU Program of competitiveness, in the period 2007-2013 for the target year (2013), concurrency growth, economic and employment growth are estimated to be 16,3 billion of euros/per year out of total 158,5 billion euros, while 32,2 billion of euros are planned for economic growth and regional

employment with development deficits, 26,7 billion euros for agriculture, 9,8 billion euros for protection and management of natural resources, etc. In other words, around 33% of the EU budget is planned for direct industrial growth.

In accordance with the *Strategy for Serbia's membership in the EU*, one of the possibilities is the development of industrial parks, which would later become clusters, together with the necessary general infrastructure, and with the possibility of fast construction of business and production facilities, fiscal incentives and qualified work force. *The National Investment Plan* supports the construction of industrial zones in 49 towns in Serbia. The process of restructuring and privatization in the Republic of Serbia is very important for industry development. One of the key steps is the development of technology, the modernisation of existing and acquiring new production technologies. In order to have a competitive industry, Serbia has to ensure conditions for quality infrastructure, which should be brought to the level of quality of the EU countries. All enterprises should introduce the *CE* mark (for the quality of goods), which would contribute to competitiveness and simplify export into the EU countries. Meeting the basic ecological demands, presents the will of member-countries to ensure that each article placed on the market is safe for use and harmless to human health and the environment. Concerning the requirements for harmonization, it is necessary to make new laws on standardization, accreditation, technical regulations in this area; to establish a market control system; to implement harmonization standards into our legislation; to modernize the institutions for the quality of infrastructure; to introduce the *CE* mark; to implement the instruments for ecology licenses, environmental impact study, etc.

1.1. The Principles of sustainable development relevant for territorial development of the industry and mining

With the establishment of the World Business Council for Sustainable Development (WBCSD, 1995), and integration of the World Industry Council for the Environment and the Business Council for Sustainable Development, institutional conditions for global solutions of ecological efficiency in the production and sector of services, have been established. The Council suggests dematerialization of the production process i.e. drastic decrease of resource consumption per unit of product/service. Within the proposal of eco-restructuring of economic and industrial branches, it has been suggested to apply the principles of eco-efficiency in production, usage, consumption and disposal. Including the ecological component in the development plans for certain industrial enterprises is generally related to a decrease in business efficiency on one side, and on the other side, successful management of the production process in industry directly affects reduction of certain pollutions (hazardous) materials per production unit. Ecological problems directly influence the growth of industrial investments and play an important role in the decision making process concerning investments. The international declaration on clean production technology (Industry and Environment, 1998, Seoul) prescribes sustainable production and consumption, advocates for cleaner production, eco- efficiency and preventive measures. Cleaner production should be a part of the integral preventive strategy in processes, products and services in economic, social, health and other segments of the environment. This is recommended for all aspects of planning, as well as for the system of environmental management. Integral and/or spatial and urban planning are the areas which

require favoring the development and placement of cleaner productions. Main goals of social development (prosperity, greater employment, higher quality of living and the environment) require, among others, certain changes regarding development and efficient utilization of natural resources. Sustainable industrial development implies changes in: a) dimensions (ecological, economic, political, and institutional), b) processes (ecological balance and elasticity, production and consumption, sector and public participation, compliance and responsibility, etc.), c) basic integration principles towards ecological and socio-economic efficiency, d) main goals of total and industrial development in decision making process, e) terms of implementation. From the environmental protection point of view, for sustainable industrial development planning it is important to respect the principles of transgenerational equality and rights, especially in utilization of natural resources – soil, water, energy sources, raw materials and other, as well as the integration of environmental protection and development. These principles are to be conducted in all phases of industrial planning. Globally, the main principles are: ecological and social efficiency, within the utilization of natural resources: a) energy saving and prevention of exploitation of non-renewable resources, substitution of non-renewable resources, b) rational usage and recycling of renewable and partly renewable resources, depending on the environment capacity for their renewal, c) limiting the gas, liquid and solid waste emission to the absorption capacity of the local environment (minimalization of waste by adjusting the emission level to the ecological capacity of the environment). Basic principles of sustainable development imply the preservation of the local environmental capacity, minimization of pollution, eco-efficiency in exploitation of minerals (and all other) resources, application of caution principles in investment and planning in the decision making process, application of the principle that 'a pollutant is financially responsible', application of EIA, SEA, IPPC instruments and other. Having in mind new European development trends and economic competitiveness, based on promotion of concurrency development of production and services, innovations, entrepreneurship, technical progress, greater introduction of the sustainable development principles, all these have put the industry and mining sector in a rather difficult situation (in relation to ecology requirements and standards, requirements to dematerialize production, to reduce energy consumption, to introduce eco-efficient technologies), etc. In the mining industry, application of basic principles of sustainability is even more complex since the material input (and output) are usually massive. It requires a longer period for adjustment and preparation of this sector for the implementation of the principles and policy of sustainable development. In 1999, basic principles for the mining sector (Berlin Guidelines, 1999) were adopted and they should be applied by the governments, mining companies and industries for the processing of minerals: 1. recognition of high priority for ecological management by the process of licensing, development and application of the managerial system in environmental protection. It should include EIA (environment impact assessment) at a very early phase, pollution control and prevention measures, monitoring and surveillance over activities, and relevant procedures; 2. Recognition of the importance of socio-economic assessments and social planning in mining operations (on the level of politics and project level also); 3. Establishment of ecology accounts in industries and governments at high level of management, strategy and decision-making processes; 4. Encouragement of workers at all levels, to accept responsibility for ecology management and the provision of adequate resources; training for ecology management; 5. Ensuring participation and dialogue with local communities and other interested parties concerning ecology and social aspects in all phases of mining activities, with participation of

women and other marginalized social groups, 6. Acceptance of better practices for minimal ecology degradation, in accordance with a special environmental regulation; 7. Acceptance of ecology-based technologies in all phases of mining activities; 8. Provision of additional funds and new financial arrangements, for improving ecologic performances of the existing mining operations; 9. Respect of risk analyses, and risk management in adopting the regulation, its design and its application in mining activities, including hazardous waste disposal; 10. Improvement of infrastructure, of information system services, of training and skills for environmental management in accordance with mining activities; 11. Avoidance of ecological regulations such as trade barriers and investments; 12. Recognition of the connection between ecology, socio-cultural conditions, human health and safety, local community and natural environment; 13. Recognition and acceptance of economic and administrative instruments, by supporting tax policy for reducing pollution and introducing innovative technologies; 14. Investigation of validity and practicability of the reciprocity principle in the contracts for the reduction of trans-boundary pollution; 15. Encouragement of long-term investments in mining industry by simple environmental standards, with stable and predictable ecological criteria and procedures.

In the planning of sustainable development of industry and mining, socio-political principles are relevant as well, among which, especially public participation, strengthening regulation mechanisms and institutional involvement, development of partnership of different actors, communication, education and consensus in the decision-making process concerning investment projects. Unfortunately, in previous history of mining development, an evident inertness and indifference was present together with a common attitude of politicians that due to ‘moon landscapes’ and pictures of surface mines, this sector is a general ‘baggage’ or burden for a society (Industry and Environment, 2000). The relatively bad reputation of the mining industry in the EU is in constant focus of environmental regulations. This sector should be more open for the requirements of ecology. Establishing of indicators for sustainable development of European mining industry is a positive step towards helping the companies in this evaluation and for improving of their ecologic performances, as well as towards the approach based on strict, scientific estimates of environmental and health risks, assessment of socio-economic influences onto the regulatory instruments, the issue of competitiveness i.e. increase in productivity and employment (Euromines, 2005). According to the Chemicals Regulations EU, 2007 which is to be implemented in the mining sector 2013-2018, it is planned that all companies which produce more than 1000 t of chemicals must be registered.

Most important issues of the mining industry are: economy of mining complexes, market, sustainable development, environmental compatibility, impact on local community, impact of the local community on the production process in the mining complex, technical-technological issues, globalization and international cooperation, etc. For instance, some general estimates on the increase of copper demand on the market (on average 3, 9% per year, in the EU 8%, USA 9%, China 10%) and on the existing and planned deficit of raw materials, concentrates and final products made of copper (especially in Europe) indicate *a future dramatic growth in the development of new production and processing capacities and a growth of the existing capacities worldwide.* A special accent, in mining industry development, is put on sustainable development and on the issues of environmental protection, health and local community safety and relations with the society (for example, through a social work license). Zeković S. 2007,

points out, that the following questions are the most important from the aspect of sustainable development of the mining industry:

- Policies and regulation in the mining industry and metallurgy sector in relation to social, economic, environmental issues and local community;
- Social issues and early involvement of local management/community into development corporate strategies;
- Risk assessment, duration of products and its implications on sustainability;
- New development (of mining complex) based on better management of mining gangues and waste management;
- Water management
- Energy management (energy saving and the minimizing of greenhouse gases), etc.

Modern European economic development policy is based on growth of competitiveness, knowledge, innovations and entrepreneurship (including principles of sustainable development) and implies a stronger pressure on the mining industry to be more eco-friendly. While, in developed countries, there is a trend to encourage and stimulate the mining industry, primarily, in order to provide enough minerals from raw materials, semi-products and the growth of national income, however their readiness to open new mines in developed countries is decreasing. Reasons for this lie in, among others, the strict environmental requirements regarding environmental protection, ecological consequences, compensations, high risk and potential accidents, etc. in this sector. After the incidents with the bursting of embankments and flotations in some mines, the areas with no possibility for opening new mines are more numerous, with the manifestation of NIMBY syndrome (Not In My Back Yard) (Ostensson O., 2000). There are also serious restrictions in the domain of economic and ecological responsibility, including the environmental damages due to mining activities. Delay in acceptance and implementation of the above-mentioned policies would certainly postpone the adoption of new strategic plans regarding the mining industry development, and they would be founded on the principles of sustainable development.

Europe needs development of natural resources in order to decrease its dependence and sensitivity on/to the global market, especially in trade with raw materials/metal ores. The cost structure of the mining industry mainly depends on the local conditions and factors, while the prices of metals are determined on the global market. The main components in the cost structure of mining industry and metallurgy are energy sources, ecology taxation and work force expenses, and they are closely dependant of regulating policies. Owing to the regulating decisions of the EU, which command higher penalties and other extra costs for ecology, the process of relocation of companies for metal production as started, as well as their expansion and the transfer of 'know-how' and direct foreign investments to Eastern countries. It is assumed that, with the EU expansion, the average GDP per capita for 15 member-states will be 10% lower, especially due to the more dynamic growth of GDP in new member-states (according to Kovačević R.,2004, in the period between 2000-2004, the growth rate of GDP in these countries was 3,2% and in old member-states 1,8%).

1.2. Low-carbon corporate economy of the EU

The EU economic growth policy, in accordance with the Kyoto protocol on climate changes, especially treats the issue of climate change impact on corporate business and management risks. ***Special attention is given to the introduction of low-carbon sources in the corporate business strategy, i.e. minimizing carbon consumption in operations by respecting the criteria of 'low carbon' in decision making processes.*** Results of the survey performed leading word companies (Green Corp, 2007) illustrate that around 71% of enterprises realize that their market position depends on environmentally responsible behaviour; 40% of enterprises think that carbon consumption is neutral; 55% of enterprises are not ready to include these criteria in their future operations; 67% of enterprises think that energy-saving affects their business; 26% of enterprises are willing to accept renewable energy resources.

Important elements of the corporate model of business and investment based on sustainable principles of the EU are: energy efficiency of the enterprises and branches (short-term expenses – long-term savings); minimizing of energy/carbon consumption – best corporate policy; increase in demand for environmentally-friendly products; positioning of corporate companies as leaders in ecology; implementation of the principle: minimize carbon consumption – maximize profit; investment risk and possibilities owing to climate, the investors' expectations and impact of factors for minimizing the energy/carbon consumption; influence of changes in climate and of principles of sustainability on management risk and positioning of the enterprises, i.e. share holders, pension funds, insurance and legal firms to climate risk management through their portfolios; role of big enterprises in the development of low-carbon industry (their influence in establishing a regulating system, state institutions, etc.); investments in low-carbon future - investing into a low-carbon industry; importance of the promotion of the so-called "green giants" or „demonization" challenge in industry; evaluation of the best ways of introduction of renewable resources; understanding and recognizing the new investment possibilities of the enterprises; instruments for the application of the Kyoto protocol onto the corporate level – low-carbon oriented development. Identification of risks deriving from the climate change and its possibilities include natural resources and raw materials, supply channels and logistics, production process, products and services, workers, market, consumers' demands, location, local community. Also it opens up questions concerning the consequences deriving from the application of the preventive measures regarding climate change in corporate business such as: consequences on the company finance financial, market positioning, investors' liability, and security. By implementing the Kyoto principles and requirements into the existing risk management system at a corporate level, it is meant the establishing of the scenario and implications on the environment and business, as well as the implementation of new practice models. For example, in the EU in 1990, the copper production complex used 4,6 Mwh/t, while in 2006 the usage was 1,7 Mwh/t or 63% less (Zeković S.,2007).

2. NEW EUROPEAN ENERGY POLICY AND STANDARDS FOR MEMBER-STATES AND CANDIDATE-COUNTRIES, IN THE PROCESS OF EU EXPANSION – THE ADJUSTMENT OF THE INDUSTRY SPATIAL DEVELOPMENT IN SERBIA

The EU Program of Concurrency and Innovation 2007-2013 estimates that 'the present level of energy consumption is *untenable* and that larger import of gas and electricity carries certain political and economic risks. In addition to the EU energy policy from 2001, member-states suggest the introduction of a new energy policy for Europe, aiming to bring it into a new post-industrial revolution – into the development of low-carbon economy in accordance with the aim of reducing the emission of greenhouse gases.

One of the main goals of the energy policy is to develop renewable energy resources, with a higher participation of these resources up to 12% in 2010, in fulfilling the demand for energy. The ambitious and realistic goal of the new EU energy policy is to reduce greenhouse gas emissions to 20% in 2020, in comparison to the figures from 1990. Furthermore, the European Committee suggests maintaining the EU's leading role in renewable energy consumption, proposing a new target – 20% of renewable and combined energy sources until 2020, with the exploitation of nuclear energy in order to reduce the consumption of fossil fuels. Today, nuclear energy makes up 14% of the world energy consumption and 30% of the electricity production in the EU.

One of the main goals of the new energy policy is to save 20% of total primary energy consumption by 2020. This indicates that the EU should consume 13% less energy than today, thus, saving 100 billion euros and 780 t CO2 per year.

The focus of these policies is on the rationalization of production and energy consumption from traditional and renewable resources, as well as from the new eco-friendly resources in compliance with *the EU Strategy for Sustainable Development, The Green Book of the European Committee on the European strategy for safe energy delivery and the Program of Concurrency and innovation of the EU 2007 – 2013.* This new EU energy policy relies on the general strategic goal and development directions for the European territory, society and economy on the principles of competitiveness, innovation, entrepreneurship and sustainable development. From the aspect of energy consumption policy, the sustainable development is based on future low-carbon developed economy in the EU, i.e. on development of the economy based on low-carbon energy sources. Development of the EU economy relies, as well, on promoting investment in ecological innovations. Eco-innovations are all innovations (ecological technologies) that aim to achieve significant and obvious progress towards sustainable development, i.e. the innovations that are oriented towards the reduction of negative environmental impact and/or towards efficient and responsible exploitation of natural resources, including energy sources, all with the assistance of the general EU Competitiveness and Innovation Programme 2007-2013. The utilization of renewable energy sources has not only many ecological advantages, but also has become the biggest growing technology/industry in the EU, offering new and innovative jobs. The development of technology and industry based on renewable resources utilization also contributes to the industrial and social cohesion of the EU.

The EU countries are main players on the international energy market, thus making the EU a big importer and the second consumer in the world. Energy is the key geopolitical and economic factor in all European and global developments. Concerning energy, the EU is very dependant on import – 50%, and this figure is likely to grow up to 70% in 2030, unless

something is done (European Commission, 2001.). Natural gas is imported 70%, oil 90%, and coal 100%. That is why the EU expansion is relevant for changing this trend, since some candidate-countries (or ex-candidate countries) are big producers of primary energy (for example: Poland - coal, Romania - oil and gas, Kosovo – the highest energy potential for coal mining in the Europe – note S.Z.). This situation resulted in the adoption of certain documents and measures by the European Committee in 2001 - *The Green Book of the European Committee for the European strategy for safe energy delivery*. This document projects certain activities which should increase the energy flow stability, safety and prosperity, and the EU expansion is a key factor for this. The energy platform includes relevant laws on energy in the EU, regulations and policy, as well as good institutional functioning (for instance: instruments of control as a legal framework in the implementation of the Directives of gas, electric energy, nuclear safety, the production of electric energy from new and renewable sources on the local market, etc.). Regarding the implementation of new and renewable sources of energy, the EU member-states are required to adopt general national targets in accordance with a global target – to make 12% of total national energy consumption from new and renewable resources, by 2010. In *the Article 47 of the EU Programme of Competitiveness and Innovation 2007 – 2013*, it is stated that it will be almost impossible to increase the participation of renewable energy more than 12% in primary demand for energy in the EU by 2010.

In the process of EU expansion, from the aspect of energy, the candidate-countries and the potential candidates (like Serbia) should fulfill eight requirements, among which is paying special attention to social, regional and environmental consequences of restructuring mines. In this context, restructuring and development of mining industry and energy supply, in wider terms, represents also the implementation of preliminary activities from the set of recommended measures for dealing with spatial consequences as a result of the restructuring and development of mines. General recommendations for candidate-countries are: (1) to make decisions on energy policy with a transparent time schedule for the restructuring of this sector; (2) to prepare their local energy market (in compliance with the directives on gas, electric energy, trans-boundary trade with electric energy, electric energy from renewable resources); (3) to improve the energy network in accordance with the European market; (4) to perform necessary preparations for emergency situations, especially by providing oil reservoirs for a 90 day period; (5) to focus their attention on social, regional and environmental effects of the restructuring mines; (6) to ensure the minimizing of waste energy and to increase the utilization of renewable energy in their energy balance; (7) to ensure the safety of nuclear waste and its responsible management. All candidate-countries for the EU membership are responsible for the realization of these directives. This will require significant investments. Although, the EU will continue to financially support these countries from its pre-membership funds, big investments will have to be undertaken by the candidate-countries themselves. In such a situation, private investments will become more important in providing a stable climate for investment.

For opening up the local energy market and harmonizing it with the EU market, Serbia's National Strategy for the Integration of SCG into the European Union (2005) defines some strategic directions of energy policy and its harmonization with the EU: *(a) reforms in judicial-legislative frame; (b) structural-organizational and ownership changes.* The development policy of energy supply includes obligations set in long-term strategic documents for Serbia's

development and international conventions and agreements (The Kyoto Protocol, the European Energy Charter, the Agreement on Energy Cooperation for SEE, etc.). Environmental protection is to be applied in accordance with local regulations and EU practice (coordination will take place until 2015/2018).

In the long-term period, Serbia is expected to follow this trend of proclaimed European strategy for the development of low-carbon economy (in the development of enterprises and small consumer branches, eco-friendly energy consumers, the NOIE consumers, etc.). Although nowadays, for instance, the sector of iron and steel and non-ferrous, chemical sector and the industry of construction materials have a small participation in the added value of total industry (under 17%), in the energy consumption in the group „Industry" they participate with over 70%. For example, energy costs in the copper complex in Serbia, participated with 60% in material costs of production with strong effects on the quality of local and regional environment. Inefficiency of basic and intermediary sectors in the energy production is the consequence of inherited industrial structure which has to be significantly modified in the future period. In reference to the estimates given by *Serbia's Energy Supply Development Strategy by 2015*., an increase in the production activities in the energy non-intensive branches (with a ten times lower energy intensity) is to be expected, which could correlate with the European trends in these sectors. It is estimated that, by 2015, the renewable energy sources will make 2% of the energy balance in Serbia. Around 350 million euros will be invested in priority programs NOIE by 2015, out of which 100 million euros into the industrial sector.

The most important role in the transition of the energy sector in our and other SEE countries, towards their functioning in accordance with the EU standards and their entering into the European energy market, plays the Treaty establishing Energy Community, 2006. Its goal was to establish an integrated market for natural gas and electric energy, and to provide a stable regulatory and market frame for foreign investments in the production of electric energy and its transmission network, together with improving the environment, energy efficiency and renewable energy sources. It is assumed that the implementation of this Treaty may have, among other, significant spatial and ecological effects and incentives for private entrepreneurship.

3. HARMONIZATION OF TERRITORIAL INDUSTRY DEVELOPMENT IN TOWNS OF SERBIA WITH THE PRINCIPLES OF EU TERRITORIAL AGENDA

For the efficiency of the strategic planning of sustainable industrial development and dislocation in Serbia in the following period, it is necessary to incorporate the European strategic framework, concept and spatial-planning practice. During the transition of Serbian economy and society, the harmonization with the terms of the EU industrial policy, with the policy of concurrency and small and medium enterprise development, with the policy of mining industry and energy supply, is a very complex and huge economic and planning challenge. It will take plenty of reforms to encourage new pro-European concepts of planning, concepts of defining transparent policies, priorities in the territorial development of the industry (structural, regional, local) and the implementation of the planned solutions (standards, indicators, instruments, measures, etc.). Transition of the social and economic system in Serbia towards a

market-oriented economy has, among other things, a certain effect on the changes in spatial industrial organization, on the initializing of new locational-spatial industrial forms, complex models of regional, technological, urban development, etc. Initial elements for defining the national strategy of industrial spatial development are:

- Consideration of relevant general principles, goals and instructions in documents about the EU industrial policy (Lisbon Agenda, 2000, many resolutions and decisions issued by the EU), together with integration and strong focus of the Lisbon Agenda on national strategies/development policies and the overcoming of the existing gaps;
- Competitiveness and innovation program of the EU 2007-2012;
- Harmonization of the strategic planning of spatial industrial development in Serbia with the principles of the Territorial Agenda EU (TA, 2007), Leipzig Charter on Sustainable Development Cities, 2007)
- Harmonization with the European documents on sustainable development – "Strategy of the EU sustainable development" (2001,2002), Action plans "Towards sustainability and development of the EU" (1993-2002) in the part regarding sustainable spatial industrial development;
- Implementation of European directives in industry and environmental protection, such as IPPC Directive, SEA Directive, etc. (incorporated into Serbian environmental laws, 2004);
- Introduction of relevant institutions, human resources and infrastructure to sustainable development planning (including industry), coordination and networking of various systems, development of instruments for TA implementation and modes for its participation in spatial and sector industrial policy, transparent cooperation on different levels, trans-boundary and international cooperation;

Territorial Agenda (2007) as a new strategic European document on territorial development and cohesion includes a few key challenges: 1) climate change; 2) prices of energy resources; 3) globalization; 4) the EU expansion; 5) excessive exploitation of ecological and cultural resources; 6) demographic challenge. TA priorities are: 1) polycentric development and innovations; 2) management and correlation between urban and rural areas; 3) promotion of clusters in trans-boundary areas; 4) expansion of the European road network TENS; 5) risk management due to climate change, trans-European risks; 6) ecological structures and cultural resources.

Institutional suggestions of TA are directed towards the protection of the EU territorial cohesion, i.e. of the EU members, as well as towards the focus on ESPON 2013, implementation of the instruments for assessment of territorial impact – TIA (Territorial Impact Assessment) in spatial development policies. The EU is planning to make a TA Action plan by the end of 2007, with an analysis of the effects of the EU revised policies on territorial development and cohesion. It is concluded that a new improvement in the quality of living in the EU requires an improvement of the European spatial planning, and better results from this new TA policy. In accordance with the above-mentioned new European TA priorities, hitherto ESDP principles are no more valid.

Potential implementation of TA in spatial planning of industrial development in Serbia should rely on defined priorities – territorial cohesion and sustainable territorial development:
(a) polycentric spatial development and introduction of innovations in all segments of industrial and social activities;
(b) better relations between urban and rural areas (positioning of industry in metropolitan area, medium and small towns, boundary and undeveloped regions, corridors, rural areas, etc.);
(c) promotion of clusters in trans-boundary areas in all Serbian regions;
(d) better utilization of the potentials of corridors and TENS network in the country;
(e) including the risks of climate change into corporate planning and management, and the 'low-carbon' economy at this level, as well as infrastructure efficiency;
(f) resources management (water, energy resources, ores and minerals, etc)

Development and spatial organization of the industry in Serbia should be based on:
a) general and specific development goals (competitiveness of industry in knowledge-based segments of classic and high-tech branches) which include relevant European policies; b) respect for the inherited characteristics of the existing spatial structure in this field; c) new location factors of the industry and potential territorial limitations; d) new locational-spatial forms in industry (technology, industrial and science parks, high-tech agglomerations – development corridors, economy zones, free zones, business incubators, etc.; e) criteria of territorial allocation of investments into this area, the principles of sustainability, low-carbon oriented production, etc.; f) development of instruments for the implementation of spatial planning, etc.

From the aspect of the proclaimed new policy of EU concurrency, a dominant role of the knowledge-based economy, innovations and entrepreneurship can be seen, i.e. the so-called 'learning economy', as well as the 'low-carbon economy'. The issue of different options for future spatial development can be raised in line with the continuing fundamental changes in knowledge and innovations. Indeed, it is a choice between various uncertain perspectives of spatial planning and the development of a 'certain' / planned future. According to Jaksic M. 2004 the challenge in front of the 21st century, is not in establishing a fixed and final *utopia*, but in the creation of *ev-topia*. In other words, instead of utopia (a Greek word for 'non-existing' place) – creation of ev-topia (a place which evolves and develops through new economic poles, mainly in peripheral parts of urban areas), as a part of a support system to knowledge, its involvement, and the adjustment of skills to the conditions, uncertainties and goals of the environment.

Having in mind the complexity of spatial development and the present intention to unify spatial-planning policies and standards within the European territory, according to Jensen O.B., Richardson T., 2004, there is more and more stress on the spatial phenomenon of the so-called *European mono-topia* (*meaning the unification of place, spatial structures, expansion of new economic poles in suburban parts of towns, etc*.). In order to overcome the adverse effects of spatial mono-topia it is necessary to modify one's understanding of the priority to implement universally efficient ways and mechanisms of planning of the industrial balance in certain areas and /or segments, towards the co-existence and acceptance of the local situation, locally 'coloured' structure of the system, its complexity, adaptability and particularity. The development should be adjusted to specific spatial conditions, i.e. depending on the incentive

and restrictive circumstances, partly on inherited characteristics, but also partly on the institututional framework as well. However, relations between these elements are highly influenced by a political and social power, in complex correlation with the market economy, globalization process and new economic poles in the urban areas.

4 THE DEVELOPMENT OF NEW ECONOMIC POLES IN URBAN AREAS

In the Green Paper on EU cities, the basic aims of urban development have been defined, based on the improvement of the quality of environment in these territories: (1) environment protection and management, which means reduction of uncontrolled pressure and growth of various activities, with the restoration of cities; (2) the curtailment of city participation in the causes of pollution, which means careful planning of the economic activity expansion and the use of spaces in the city that have been already ruined by devastated industrial and commercial objects. It is often the case that such objects in the cities are abandoned because of old technology and for other reasons, so it has been suggested that these spaces (brownfields) are put to good use by reconstructing them. The experiences in planning industrial development in Eastern–European cities have been directed more towards new construction (greenfields), and less towards activating abandoned industrial and other kinds of locations (brownfields).

Throughout Europe the question of the mode of organization and management of the development of economic activity in cities is raised. To enable this progress a compromise is necessary among the numerous key elements and mobilization of effort towards for example, economic issues, establishing a public/private cooperation, promotion of political interests and socio-cultural ideas, goals means and support. In addition to the general European trend of lessening the inter- and intraregional differences, in planning spatial development it is important to establish new „economic poles of development“in urban areas and metropolitan peripheries. According to Burdach.J., 2006 it is about a discourse of periphery growth (metropolitan). At the same time, a trend of faster economic growth of periphery EU regions can be noticed with the acceptance of new member-states. In other words, a presence of *a new discourse of double periphery growth – growth of perihery metropolitan areas and growth of periphery EU regions (especially city areas*) can be noticed. New economic poles in metropolitan peripheries are a result of high participation of public sector in all aspects of their development (especially in providing heavy infrastructure, support in reducing spatial disbalance, etc), but also because of new foreign and domestic investment. The term „new economic pole“ means various kinds of new dynamic centres with functional specialization in the metropolitan periphery. Basic spatial forms of new economic poles in urban areas (suburbia) are industrial parks, technology parks, manufacturing complexes, shopping malls, logistics centres, business centres and others. State intervention, schema of regional planning and local actors have a significant role in their development.

In some big towns of Serbia (ex. Belgrade, Novi Sad), new economic poles – new economic, commercial, industrial, entrepreneurial zones, developed by planning or spontaneously in the suburbian areas (along motorways, and major roads) are a priority in spatial development and planning of spatial organization of a certain area. The reasons for such a trend are manifold - from lower land prices, available building land, proximity of residential areas, favourable conditions on location and others. The perspectives of European spatial development (ESDP) have identified urban expansion of „work“ zones as a big problem, and somewhat opposite to the term of sustainable compact city, above all, because of traffic

augmentation, greater energy consumption, greater costs of infrastructure, communication costs, negative effects on the environment, endangering the agricultural land et sl. Because of this, the tendencies of deurbanization are being transformed into suburbanization, because in periphery metropolitan areas the level of growth of economic activity is rising rapidly, as well as the costs of infrastracture, ecology etc. New centres of production and consumption have an influence on the transformation of suburbia (as mainly residential zones in an urban periphery) into post-suburbia (which signifies the process of transformation on multifunctional locations). According to Burdack,J., 2006, the existing concept of classic spatial models of cities (standardized „rings" and sectors linked by radial vectors of communication) are more and more transformed into polycentric forms, formed by clustering different kinds of locations for different purposes. A trend of the „breaking up" urban structures into many specialized and fragmented localities in an inhabitated structure is evident. This process begins the development of a „functional archipelago" in an urban fabric, unlike centres et sl., which is a consequence of transition of an industrial into post-industrial society, i.e. transfering the agglomerative advantages of cities onto a regional/periphery environment. Based on the experiences of European cities, the size of new economic poles in urban peripheries is 5.000-10.000 employees, depending on the size of the metropolitan areas.

In the research of the development of new economic poles-functions of spatial clusters in a determined spatial entity, the agglomerating mechanisms have an important role. In the typology of new economic poles in an urban/metropolitan periphery, the modus of agglomerative mechanisms of clusters of functionally linked firms („functional cluster") and „incoherent" clusters is very important, as well as the functional specialization of poles. The generally accepted classification of poles is the one on „dynamic" and „stagnant". To the first ones belong, for example, shopping malls, airport zones of development, technology parks, zones of business-commercial activity in the urban periphery, while to the others („stagnant") usually belong the relicts of the Soc.-realistic period (classic industrial, work zones, military complexes et sl.)

The development of new economic poles in cities is a consequence of activiating new locations and changing the existing spatial organization under the effect of multinational companies and the development of activities in accordance with a knowledge-based economy. On the other hand, according to Dovenui Z.,Kovacs Z., 2006, the pst-communist development of eastern-european cities demonstrates hybrid forms of dislocation – relics of a spatial structure from an earlier period and it shows a new phenomenon of structure transformation by way of dislocating neweconomic clusters, formed by spontaneous agglomeration of „incoherent"clusters characterized by the absence of intercompany linkage.This process has taken place in a relatively short transition period, under the effect of the market forces and the process of a globalized production, trade and consumption. The development of new economic poles is a dynamic process, initialized by the development of a „critical mass" in the local and regional dislocation of activities. The new economic poles are understood as a great area of concentration of economic activity consisting of many „points" (entreprises, plants, facilities etc.) pivots, branching, which have a specific spatial configuration. They are the initial nucleuses of the growth of new employment in city peripheries, and an early signal of polycentric structure of areas. In urban planning until recently the traditional city peripheries were identified as a combination of industrial and work spaces, family houses, traffic corridors and greenery. However, in the recent practices of urban planning , it is becoming more evident that these spaces are more sensitive to market signals and initiatives in comparison to thecity

zones. In addition to high-tech industrial and business activity, there the activities of transportation services are developed, as well as logistics, production and wholesale (storehouses, warehouses etc.) and retail (shopping malls) and various services.

CONCLUSION

In compliance with the EU industrial policy, sustainable development of this sector should be based on a vision with clear development goals oriented towards: restructuring of production into knowledge-oriented branches through the development of small and medium enterprises; eco-restructuring of the branch matrix towards dematerialization of production; development of energy efficient low-carbon economy, higher concurrency of the area and development of industry and mining sectors; defining the regional policy based on technical progress, reducing the differences in the levels of development and the principles of sustainability; implementation of novelties into the growth of enterprises in order to provide sustainable development; implementation of the Kyoto Protocol in corporative 'landscaping', introducing low-carbon energy consumption and risk management in company operations and its spatial organization; implementation of 'integral pollution control' in enterprises, including waste prevention; transparent concept of responsibility for ecological damage; emission standards for all industrial sectors; gradual reduction of air and water pollution, according to the emission standards for specific sectors (the existing sources of pollution require a certain transition period to implement the measures of environmental protection); tax benefits and subventions for enterprises that comply with the environmental protection standards and apply the results of research; tax stimulations for applying new technologies (which replace non-renewable resources with renewable ones, improve energy efficiency, reduce industrial waste and pollution); ensuring that enterprises have easy access to financial means for environmental protection as a precondition for its implementation; utilization of 'clean' technologies; rational exploitation of energy, raw materials and materials; risk management.

The possible consequences for future territorial development of industry in Serbia if it fails to meet the requirements of the European policy in industry, mining industry, energy sources, spatial planning and environmental protection, could lead to a) its further restructuring process and increased competition of local industry within the new development phase; b) process of spatial planning of the industry and mining development (falling behind in concepts, methodology, spatial-planning policy, planning instruments and their implementation) in country, regions, towns, municipalities and in some enterprises; c) environmental protection, due to the falling behind in the implementation of the principles of sustainability (especially precaution) at different spatial and corporate levels; d) eco-restructuring and sanitation of the environmental effects; e) defining the strategy for sustainable spatial development of industry and mining, according to TA; That is why, it is essential to respect and to allow market trends and globalization mechanisms to effect spatial changes and the development of new economic poles in urban peripheries, together with the influence of strong institutional and political forces, with channeling the of public interests.

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