LEGAL ASPECT OF ENVIRONMENTAL PROTECTION IN CONSTRUCTION OF THE HIGHWAY / CORRIDOR Vc THROUGH BOSNIA AND HERZEGOVINA

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Summary: One of the most important conditions for economic development and overall progress of the state of Bosnia and Herzegovina is the development of a modern transport network. If we consider motorways as an essential element of state development, the construction of Corridor Vc should be considered above all as a very important social and economic project that will bring new momentum to the economy and domestic production. Corridor Vc is included in the TEM network of South East Europe's transport infrastructure and runs from Budapest (Hungary), via Osijek (Croatia), Sarajevo (BiH), to the Ploce port (Croatia). Throughout BiH, the 330 km long Vc corridor route runs north-south, in the middle of the country, in the most favorable natural conditions, in the valleys of the Bosnia and Neretva Rivers. This paper presents the project's expected impacts on the environment and social issues, as well as the measures that must be taken to meet the legal and environmental requirements of the project as part of environmental and social policy.

Keywords: Bosnia and Herzegovina, Corridor Vc, environment and social issues

I INTRODUCTION

JP Motorways of the Federation of Bosnia and Herzegovina is a public company from the Federation of Bosnia and Herzegovina in charge of the construction, operation and maintenance of motorways in the Federation of Bosnia and Herzegovina. About 100 km of highway is already built and operational. The construction of this highway is expected to be a key driver of economic activity and to enable BiH to be included in major European traffic flows and the global European economic system. The construction of the highway will lead to rational integration of Bosnia and Herzegovina with neighboring countries and regions and to achieve stabilizing and developmental effects for the country.

Improving transport conditions will improve the quality of life, which will be manifested through:

- reducing the length of travel and journey times of goods and passengers;
- reducing the cost of transporting goods and passengers, increasing employment;
- valorization of geo-traffic position of BiH;
- increasing the competitiveness of the economy in the gravity area of the corridor;
- launching new projects and increasing private investment in the regional economy.

The passage of the future highway will lead to many changes in the observed area - it will affect the development of new activities (tourism, catering, new jobs, work areas in the immediate vicinity of the highway, highway maintenance facilities), but will also change the existing activities (agriculture , hunting, forestry). The population included in the sociological analysis did not express any specific attitude towards the potential impact of the future highway, both in the most general sense and in the individual corridor variants. In other words, the local population, apart from occasionally expressing concern for the potential jeopardy of some activities by crossing the future highway or expressing dissatisfaction with some imagined technical solutions (crossing the highway across the Neretva River near Pocitelj due to endangering the landscape), did not show any specific reaction to the corridor. Considering the updated analyzes of the most recent and definitely adopted variants of the corridor, the sociological analysis concluded that the corridor does not significantly affect existing activities, that it does not significantly affect existing settlements, since the route was moved beyond the potential impact on existing settlements and activities, and that the corridor bypasses the most sensitive natural ones, cultural - historical and tourist areas of interest in the potential zone of influence (except in the case of the construction of a bridge near the settlement Počitelj where the road crosses to the west side of the Neretva River). In the latter case, as in the case of the construction of bridges over other, smaller rivers, sufficient care must be taken in the design of the said bridges and their positioning in such a way that they less encumber the existing valuable landscape.

1. Environmental and social policy

The quality and environmental policy of the JP Motorways of the Federation of Bosnia and Herzegovina is based on modern market-oriented principles, with the aim of meeting the expressed needs for transport of people and goods in a safe, fast and reliable manner. Construction, management and maintenance of modern road infrastructure while respecting the highest environmental requirements. Quality construction of highways and expressways, environmental protection, as well as maintenance and management of

the product are the need to respond properly and adequately to the set requirements.

Special attention is paid to the construction of the motorway:

- Preferring the selection of contractors (suppliers) of work that are environmentally aware while adhering to all environmental regulations and procedures;
- Control of products (services) which guarantees the fulfillment of contractual and legal obligations;
- Supervision key to the competencies of workers and management in quality and environmental management;
- Monitoring the work process and the integrated quality and environment management (IMS) system to ensure the highest possible efficiency and business improvement, as well as the conservation of natural resources and energy through their rational use.

2. Environmental protection and monitoring

The construction of every facility, including the motorway, has an environmental impact, but it is necessary at all stages from construction to the period of operation to take into account and take the necessary measures to minimize the negative impacts and to be below the prescribed limit values. During the construction works on a motorway as a complex structure or part of a motorway or on a section of a motorway that forms a separate construction unit, environmental studies will be performed as environmental protection measures and are subject to supervision and verification by authorized supervisory persons.[37] In the initial phase of design documentation preparation of the EIA, the areas through which the motorway is planned to be constructed should be analyzed. In order to prevent and / or mitigate the direct and indirect negative impacts of the project on the environment, basic information is provided for:

- the corridor areas that the motorway route must avoid due to its exceptional value or sensitivity (protected natural and cultural values, valuable forest and agricultural land, water supply, etc.);
- the corridor areas through which the route may pass through the application of mitigation measures.[38]

The answer that should also be given in the project documentation is to prescribe environmental measures that should be implemented through the construction period and subsequent exploitation. The process of monitoring the environmental impact should start from the very beginning of construction and implement the monitoring plan through three phases:

- zero monitoring status (before commencement of work);
- monitoring during the construction phase;
- monitoring during facility exploitation.

2.1. Design phase

A checklist at the design stage is necessary in order to properly consider and take into account all environmental aspects and problems, that is, to properly draft safety measures. The special protection zones established by the project must be respected and specific protective measures adopted in

[37] Law on Highways on Corridor Vc, FBiH Official Gazette, no. 08/13, Article 20.

[38] Zaštita okoliša i monitoring, http://www.jpautoceste.ba, (20. april 2018.)

relation to them. This also applies to the construction phase and must be emphasized in the tender documentation.

2.2. Construction phase

In order to meet all the environmental requirements of the project, an environmental engineer (environmental expert) should be hired to oversee the way the works are carried out by conducting frequent inspections, thus protecting the interest of investors. Also, the contractor is obliged to have a person or persons responsible for monitoring the implementation of environmental requirements according to the tender documentation. This condition should be emphasized to the contractor when negotiating and before the contract is signed. The parameters monitored during the execution of the work cover the implementation of the adopted protection measures and all these parameters will be under frequent control of the environmental engineer and under the responsibility of the contractor.

2.3. Maintenance phase

The environmental engineer is tasked with providing a detailed procedure, technical manual / instructions for the regular maintenance of drainage systems, security and light signage, emergency repairs (spillage / spillage of hazardous materials) and maintenance of green spaces (these documents may also be included in tender documentation). While the first and second phases are carried out over a relatively short period of time, the third phase is carried out for a longer period, that is, during the entire exploitation period. After the completion of the construction of each section, carrying out the technical inspection, with the issuance of the operating permit, the authorized institutions also prescribe the criteria that must be satisfied in a later period of exploitation. These criteria prescribe the permissible limit values for individual pollution and the frequency and types of testing and reporting required for the highway manager. During the period of exploitation, according to the regulations in force, it is the obligation of JP FBiH Motorway to carry out control measurements of the quality, ie pollution of water, air, soil and noise level.

Legal aspects and compliance with relevant environmental and social regulations

To achieve human and environmental protection, three operational objectives are envisaged to ensure strict implementation of adopted regulations and international commitments, align domestic environmental legislation with EU legislation, and integrate European sectoral environmental policies into FBiH[39] sectoral policies. The Environmental Impact Assessment was carried out in accordance with the Law on Environmental Protection (Official Gazette of the Federation of BiH, No.33 / 03) and the Rulebook on plants and plants for which an environmental impact assessment is required and the plants and plants that can be constructed and commissioned only if they have an environmental permit (Official Gazette of the Federation of BiH, No. 19/04).
The Environmental Law is in line with the following European and international regulations:

- EIA Directive 85/337 / EEC as supplemented by Directive 97/11 / EC (Environmental Impact Assessment of Major Industrial and Infrastructure Projects);

[39] Strategija zaštite Federacije Bosne i Hercegovine, http://www.fmoit.gov.ba, (20. april 2018.)

- UNECE Convention on Environmental Impact Assessment across Borders (Espoo Convention adopted in Espoo, Finland on 25.02.1991);
- UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in the Environment (Aarhus, 1998 Denmark);
- IPPC Directive 96/61 / EC (IPPC - Integrated Pollution Prevention and Control);
- Union II - Directive (Prevention of major accidents).

During the environmental impact assessment process, the provisions of other environmental laws and regulations adopted pursuant to these laws were taken into account:

- Law on Nature Protection (Official Gazette of the Federation of BiH, No.33 / 03)
- Law on Water Protection (Official Gazette of the Federation of BiH, No.33 / 03)
- Law on Air Protection ("Official Gazette of the Federation of BiH", No.33 / 03)
- Law on Waste Management (Official Gazette of the Federation of BiH, No.33 / 03)[40]

All of these laws were enacted in 2003 as a set of environmental laws. The laws are drafted under the Phare program of the European Commission and are in line with European regulations. The laws are enforced by the Federal Ministry of the Environment and Tourism. TEM (Trans-European North-South Motorway Project) standards and guidelines issued by the United Nations Economic Commission for Europe (UNECE, Third edition - February 2002), as well as international regulations, have been taken into account in the preparation of the environmental impact assessment documentation. financial institutions (WB, EBRD, EIB). In the further phase of preparation of the project documentation, as well as in the construction phase, the Guidelines for the Design, Construction, Maintenance and Supervision of Roads (Official Gazette of the Federation of BiH, No. 80/06) will be used. The guidelines have been drafted in accordance with EU standards and standards and are applicable from 01.01.2007. years. Numerous public-sector professional institutions dealing with environmental issues in both entities, either as part of the ministry or under the authority of the entity governments, participate in the creation and implementation of environmental policy. Within their responsibilities, they provide professional services (eg statistics offices, hydrometeorological, etc.), monitoring and control of activities that have an environmental impact (eg inspection), fundraising activities, encouraging and financing preparation, implementation and the development of programs, projects and similar activities in the field of conservation, sustainable use, protection and improvement of the environment and the use of renewable energy sources, and the planning and execution of activities aimed at protecting people, goods and the environment from natural disasters, emergencies and incidents.[41]

3. Measures to mitigate adverse environmental impacts

[40] Projekt autoceste na koridoru Vc procjena utjecaja na okoliš, http://www.ekoakcija.org, (20. april 2018.)

[41] Zovko M., Brajković D., Kralj S., (2012), Experiences in environmental documentation preparation as part of the design of the main highway project on the Vc corridor in Bosnia and Herzegovina, Parliament of Croatian Builders, Cavtat, p. 3

Mitigation / prevention measures will be implemented at all stages of the implementation of this project. Environmental impact studies include environmental action plans that recommend that mitigation measures be implemented in the following phases: design, construction, monitoring and maintenance. The motorway route is located in a space that avoids all the recorded cultural and historical monuments. Measures for the protection of cultural and historical heritage are contained through measures for the protection of air, water, soil, noise, etc.

3.1. Air quality

During the construction and execution of earthworks, air quality could be occasionally impaired by dust emissions as well as emissions from generators and vehicles. During the use of the highway, the exhaust emissions from traffic will adversely affect the air quality in the immediate vicinity of the highway. In order to reduce the degree of air pollution during the construction of the highway, it is necessary to consider the possibility of installing vertical ventilation pipes in tunnels, in order to reduce the increased concentration of pollutants in tunnel portals. Green barriers as well as sound barriers can also reduce the dispersion of pollutants in the air. In order to control and manage the air quality, the following measures are proposed:

It will be ensured that all engines on construction machinery and vehicles meet FBiH standards and are regularly maintained (this implies that machinery and vehicles to be used in construction works must have operating licenses and built-in emission reduction filters);

Roads will be sprayed regularly as well as soil material deposited;

Covering vehicles transporting soil and other bulk materials;

On dirt road construction sites, vehicle speeds will be limited to reduce dust emissions;

A thick vegetation with many leaves will be planted in the belt between the road and the settlement to filter it;

Equipment and machinery must be switched off when not in use.

3.2. Habitat fragmentation prevention

Today's approach to highway construction is far more contemporary and less damaging to nature. Extensive environmental impact studies are undertaken prior to each motorway construction, seeking to implement any research that exists on an area using an interdisciplinary approach. Modern highways have a number of measures to prevent habitat fragmentation. In fact, it would be more accurate and correct to write that this is a series of measures that reduce the consequences of habitat fragmentation. Some of these are: green bridges (often referred to as animal or animal bridges), viaducts, canals, tunnels and bridges. Each of these buildings has its good and bad sides. They have in common that there are too few of them and they do not have a large enough surface. There are many other problems such as noise caused by the movement of cars and lighting, which have a very adverse effect on the movement of animals and their orientation in space, etc. The most famous buildings are green bridges, although they are only between 100 and 200 m large. Their construction is extremely expensive. and there are too few of them because of this. Most often they are built in places where there are not enough natural crossings. By natural transitions we mean areas above tunnels and areas below viaducts and bridges. Green bridges are primarily intended for large animals that have a very wide range of motion and need different ecosystems to survive. These include wolf, bear and lynx. Bears and wolves often conflict with the population

living in their fringe area. The reason for this is that the habitat of large animals is usually not large enough to supply them with the necessary resources for life. The consequences are either killing animals by hunters or killing them on the roads, which, in addition to killing an animal, can lead to the loss of life.[42]

3.3. Cultural and historical heritage

The impact of the construction of the road on the cultural and historical landscape is considered throughout the construction of the highway, based on the analysis on their vulnerability is determined and the following system of protection measures is applied: Relocation of the route (for all cases of physical destruction and endangering the basic values of the cultural property), Relocation of the cultural property (for all cases where the said action is possible without disturbing the fundamental values of the cultural property), Protection of the cultural property on the spot (for all cases where the cultural property and its basic values can be protected by special protection measures at the existing location), Research and documentation of the cultural assets (measures implemented for all endangered cultural property, including the conservation of movable archaeological finds from endangered sites and zones).[43]

II CONCLUSION

The construction of new motorway sections will enhance regional traffic and reduce local traffic congestion. The proposed changes to the project will improve road safety. All relevant authorities should have adequate capacity and resources to manage environmental and occupational health and safety risks if they fully implement the mitigation measures provided for in environmental impact studies. The aim of the drafting of environmental documents is to preserve, protect, restore and improve the quality and capacity of the environment, to protect natural resources and their rational use, to prevent pollution and pollution, to mitigate the direct and indirect negative impacts of projects on humans, flora and fauna, water, air, land , climate, landscapes, cultural heritage and material assets.

III LITERATURA

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