Port of Ploce

Trade and Transport Integration Project – Bulk Cargo Terminal

Transport of Stone Material from the Construction Sites of the Border Crossings Klek and Zaton Doli

Addendum No. 2 to the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP)

**Introduction**

The Trade and Transport Integration Project was approved in 2006, with the objective to develop trade along Corridor Vc by improving the capacity, efficiency and quality of services on the southern end of the Corridor with particular focus on the port of Ploce and on coordination aspects among all corridor participants. In particular, the project supported the construction of a Bulk cargo terminal with an initial capacity of 4 million tons.

Social benefits of the Bulk Cargo Terminal construction will have its place in the overall economic development of the local and wider community. Also, upon the commencement of the BC Terminal operations, the operator will ensure the existence of employees from surrounding area. The realization of the project will have positive economic and social impact.

After five years of implementation, the Project, as proposed to be extended under the additional financing, remains likely to achieve its development objectives by the end of the project. For the construction of the Bulk Cargo Terminal, preparation works for soil consolidation are approaching its completion and the contract for the Terminal construction is scheduled to be awarded in fall 2011.

Port of Ploce Authority (hereinafter PPA) used excess excavated stone material from the construction of the junction road Karamatici-Ploce (within the construction of the motorway Split-Ploce) for the preparation works of Bulk Cargo Terminal. The road works were completed, and the quantity of stone material that was delivered was not sufficient enough for the project (lacks some300.000 m3). In the meantime, the Ministry of Finance of the Republic of Croatia proposed to PPA to use excess stone material from the construction of nearby border crossings Klek and Zaton Doli.

The transportation of material is covered in the project environemnatl due diligence documents (the original EIA and EMP and the Addendum No. 1, however not from this location. For that reason, PPA prepared this document that presents an Addendum no. 2 to the existing EIA and EMP.

**Background**

In accordance with the World Bank’s safeguard policies and procedures, the original Project has been classified as Category A according to the World Bank’s OP 4.01 for environmental assessment purposes. For this reason full Environmental Impact Assessment with EMP was prepared for the Bulk Cargo Terminal.

EIA for the Bulk Cargo Terminal was finalized in February 2006 (amended in June 2006), and the Ministry of Environmental Protection, Physical Planning and Construction (hereinafter MEPPPC) after consultation with the public issued an affirmative Decision on EA in November 2006, and the Final EA was disclosed in InfoShop.

In February 2010 Addendum No. 1 to the existing EIA and EMP was prepared, explaining the environmental implications of the increase of technological capacities and management of the impacts.

For the execution of preparation works of Bulk Cargo Terminal large quantities of stone material are required (soil consolidation). So far PPA used excavated stone material from the construction of the junction road Karamatici-Ploce (within the construction of motorway Split-Ploce). Total quantity of 1.600.000 cubic meters of stone material was transported and disposed in the port of Ploce. As the road works were completed and the delivery of stone was suspended, PPA needed additional 300.000 cubic meter of material from another source to complete future Bulk Cargo Terminal storage areas soil consolidation.

The Ministry of Finance of the Republic of Croatia proposed to PPA to use excess stone material from the construction of nearby border crossings Klek and Zaton Doli.

According to s agreement between the Ministry of Finance and PPA, the Commission for the Management of Property of the Government of the Republic of Croatia issued a written consent to the Ministry of Finance for disposal of excess stone material from the construction of border crossings Klek and Zaton Doli. The Ministry of Finance is obliged to record the excavated and transported quantities of stone material. The exact quantity, type and value of the material will be assessed by the State Inspectorate of the Republic of Croatia.

PPA estimated that proposed material is similar to the one that was previously obtained from the junction road and that it is suitable for the Bulk cargo terminal soil consolidation.

In a spirit of creating clear, unambiguous safeguards documentation the World Bank has requested PPA to prepare an Addendum no. 2 to the existing EIA and EMP, outlining context, identifying environmentally relevant activities as well as their diligent management under World Bank safeguards policies.

**Proposed Transport of stone material**

The Ministry of Finance is responsible for the implementation of the construction of border crossings Klek and Zaton Doli. The building permits were issued by the MEPPPC.

The competent Ministries of the Republic of Croatia estimated that this infrastructure projects will not have special negative impact on the environment.

The construction works commenced on March 1, 2011 (Klek) and April 12, 2011 (Zaton Doli).

The construction sites of the future border crossings Klek and Zaton Doli are located in Dubrovnik Neretva County, in vicinity of the existing border crossings, at a distance of approximately 32 km and 41 km south from the port of Ploce. The future border crossing Klek is located in Slivno Municipality, and border crossing Zaton Doli in Ston Municipality.

The route of stone material transport is section of the Adriatic highway (State Road- D8) passing through towns Z. Doli – Neum – Klek – Opuzen –Ploce, as shown in Picture 1, which represent the shortest route between the border crossings and the port of Ploce.



**Picture 1.** The route of the transport of stone material in the port of Ploce

According to the design documents for the construction of new border crossings, there will be approx. 300.000 cubic meters of excess stone material from construction works that will be used for the preparation works for the Bulk cargo terminal (soil consolidation).

More than 80 percent of the stone material that is being excavated at the construction sites is a crushed stone with larger granulation and contains virtually no dust particles. The stone is obtained with surface excavation (with backhoe excavators), loaded with the loader onto tipper trucks (dump trucks) with capacity of 15 cubic meters, similar to the ones shown in Picture 2, that transport and dispose stone material at dump site of future Bulk cargo terminal in the port of Ploce.



**Picture 2.** Dump trucks with capacity of 15 cubic meters

The maximum allowed axle load on the transport route is 17 tons so the trucks are loaded with total quantity of approx. 10-12 cubic meters of stone material and they are never full.

The loading onto trucks and their entering into traffic is organized with traffic signaling and organization of the construction site (work safety).

The trucks are driving from the construction sites through the above mentioned route of the Adriatic motorway up to the eastern entrance to the port of Ploce. A special entrance and route within the port territory up to the dump site is organized for trucks. Stone material that is unladed by trucks and disposed at the Bulk cargo terminal dump site is periodically leveled with bulldozers.

PPA and the Contractors agreed jointly on the means, dynamics and control for the transport of the stone material. Expected quantity of stone that will be transported daily from both construction sites is approx. 2.000-3.000 cubic meters, which totals to approx. 160-250 trucks.

The transport of stone material commenced in the beginning of April 2011. So far smaller quantities are being delivered (a few trucks daily). The planned completion of the transport is October 2011. In case the transport is suspended or reduced during the summer season (July and August) the stone delivery will continue up to the end of 2011.

**Environmental impacts associated with the transport of stone material**

The potential impacts associated with the transport of stone material would be emissions of noise, exhaust fumes and dust during transport.

Since the similar stone material has already been transported for the Bulk cargo terminal from another similar construction site and it is disposed in the same area as originally foreseen, which is an area of the future Bulk Cargo Terminal, it is estimated that there will be no significant additional environmental impacts.

Transport infrastructure and traffic safety

On the Adriatic highway (state road D8) on count stations Klek and Zaton Doli in 2010 annual average daily traffic (AADT) is 5.939 i.e. 5.329 vehicles per day, and average summer daily traffic (ASDT) is 11.132 i.e. 10.050 vehicles per day (Source: Croatian Motorways, Road traffic count in Republic of Croatia in 2010-summary, Zagreb, May 2011).

It is assumed that the share of trucks in the overall structure of traffic flow is 15%, which is between 890-1500 trucks per day (AADT) i.e. 1500-1670 trucks per day (ASDT).

Regarding the impact on transport infrastructure and traffic safety, the stone will be transported with trucks on route of the Adriatic highway, which would represent a load of the transport route of 160-250 trucks daily, which represents an increase in the share of trucks in the overall structure of traffic flow between 2,7-4,7 % (AADT) i.e. 1,4-2,5% (ASDT).

The traffic load does not represent a problem because similar stone material has already been transported to the port and even larger quantity than the subject one (approximately 5.000-6.000 cubic meters daily during the summer season).

If PPA estimates that the traffic safety is compromised we shall directly alert the contractors to slower the transport dynamics (e.g. up to 200 trucks daily).

During the greater tourist shifts (weekends in July and August) the contractors plan to reduce the intensity of works because of traffic congestion. In that case, up to 100 trucks per day would transport the material. This number is insignificant compared to total traffic on that route during summer season.

Air quality

The air quality in the vicinity of the road is satisfactory when the daily traffic is up to 15.000 vehicles per day” (Source: Zenzeravić&Savić, Comparison of railway and road mass goods transport from ecological aspects, 2002.)

Analyzing the number of trucks that transport the stone, the following can be noted:

* The current share of vehicles on the state road D8 is 15%
* The largest expected increased in relation to the current situation is 4,7%

Therefore it can be concluded that transport of stone material regarding the impact on air quality will, given the density of traffic, have little effect, and that it will not change the air quality categories.

Dust

As already mentioned, the stone granulation is large so there is virtually no dust. If dusting will be noticed on the access route or complaint will be submitted to PPA, PPA shall require that the contractors cover trucks and/or spray the transported material.

Noise

Regarding noise impacts on the environment, the average level of noise produced by motor vehicles is 85-90 dB. Permitted noise level by ECE (Economic Commission for Europe) is 91 dB.

It can be concluded that the level of noise produced by motor vehicles is within the allowed limits, and that compared to other sources of noise it will not contribute significantly to the noise impacts if trucks that transport the material are regularly maintained. All the trucks have to have regular checkups and are attested for transportation.

In terms of impacts on local residents, the entrance for trucks with stone material as well as the dump site in the port is located at a distance of at least 2 km from the next settlements, which is considered sufficient to buffer and diminish the impacts of noise emissions.

**Mitigation measures and monitoring plan**

The original EIA presented detailed baseline data on biological land characteristics of the surrounding area, a review of protected natural components and areas specified for protection (Chapter 3.1), a description of marine communities in the narrower area of Project location (Chapter 3.2), climatic characteristics (Chapter 3.3), air quality (Chapter 3.4.), characteristics of marine sediment (Chapter 3.5), and development plans of the town of Ploce (Chapter 3.6.).

During the five years of project implementation PPA implemented environmental monitoring.

This Addendum no. 2 does not envisage any new type of works or activities, since the stone material has already been transported to the same area in the port, but now it is from a different source. Thus the mitigation measures already identified in the EIA and EMP and the Addendum No. 1 to the EIA and EMP remain applicable, as well as the responsibility for their implementation.

If necessary (decided by PPA environmental specialist, supervising engineer), the following additional mitigation measures shall be applied:

* Implement measures to reduce and control dust releases to the atmosphere, such as covering stone piles during transport.
* the stone material in trucks will be sprayed with water before connecting to the transport route.
* Regular maintenance to minimize noise and exhaust emissions from transport vehicles. Defective vehicles will be prevented from use.
* Driving safely and restricting vehicle speed to ensure traffic safety.
* Slower dynamics of stone material transport if the traffic safety is affected.

**Reporting**

PPA reporting obligation related to environmental aspects remain the same.

**Public disclosure**

This addendum no. 2 to the EIAs for TTI project will be disclosed on the PPA’s website.