**Ex-post CBA** **R1 Žarnovica – Šášovské Podhradie**

The Grant Agreement for the expressway project „R1 Žarnovica – Šášovské Podhradie“ was signed on 21. 09. 2009. The First Amendment to the Grant Agreement was signed on 30. 10. 2009. It was a financial contribution for the construction of 18,05 km of the expressway R1 Žarnovica – Šášovské Podhradie.  The Beneficiary (National Motorway Company, hereinafter as “NMC“) received a financial contribution of **EUR** **130 612 039**, consisting of the contribution of **EUR** **111 020 233** from the European Regional Development Fund (85 % of the total amount) and the contribution of **EUR** **19 591 806** from the state budget (15% of the total amount). The contribution was determined on the basis of the financial analysis of the project’s cost/benefit analysis (CBA) at the financial  gap of **100% (i.e. 100% of the eligible project expenditure was provided from the Operational Program Transport 2007 - 2013)**. The expressway R1 Žarnovica – Šášovské Podhradie is completely in operation since January 2011.

As the Managing Authority, the Ministry of Transport and Construction of the Slovak Republic proceeded to an ex-post review of CBA to improve the quality of future CBAs for road projects, to refine transport modelling of future projects and to help to update the CBA Methodological Guide (if proven necessary).

This activity will contribute to increasing the efficiency of expenditure of public and EU funds.

The following actual input data for the period from 2008 to 2018 were considered for the ex-post CBA:

*GDP – source: Statistical Office of the SR, Ministry of Finance of the SR, Slovak CBA Guide OPII*

*Inflation – source: Statistical Office of the SR;*

*Fuel prices – source: Statistical Office of the SR;*

*Investment costs – source: National Motorway Company accounting;*

*Traffic intensity – source: nation traffic census 2005, 2010 and 2015, automated traffic counters of NMC;*

*Operation and Maintenance costs – source: National Motorway Company accounting;*

*Revenues – source: National Motorway Company accounting;*

*Accidents – source: Police of the SR*

Subsequently, the CBA of the entire project was recalculated including predictions until 2037 using the currently valid methodology for the Operational Programme Integrated Infrastructure (2014 - 2020). The original CBA was calculated using the methodology of the previous Operational Programme Transport (2007 - 2013).

**Evaluation of financial analysis**

The financial gap did not change, the updated CBA confirmed the financial gap of 100%.

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| **Investment cost** | Original  **165 427 681 EUR** | Updated  **175 608 578 EUR** | **6,15%** |

The stated investment costs are non-discounted and excluding VAT.

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| **Residual value** | Original  **33 849 381 EUR** | Updated  **47 940 412 EUR** | **41,63%** |

In accordance with the current CBA manual the updated residual value was recalculated using the method on the basis of the lifetime of the infrastructure components.

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| **Discounted**  **Revenues** | Original  **46 065 014 EUR** | Updated  **-27 309 117 EUR** | **-159,3%** |

Incremental toll revenues are directly dependent on the freight transport intensities. Freight transport intensities on the analysed expressway section are lower compared to the expected traffic volumes from the original CBA. Another reason for the decline in expected revenues is the change in the method for their calculation; whereas in the original CBA only the toll revenue on the newly built expressway section R1 was quantified, the updated CBA includes the difference of toll revenues between the R1 section and the parallel road I/65.

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| **Operation & Maintenance costs** | Original  **11 589 650 EUR** | Updated  **897 241 EUR** | **-92,26%** |

A significant change concerns the operation and maintenance costs of the project, which is caused by the change in the method of calculation in the current version of the CBA Methodological Guide. The current maintenance costs and periodic maintenance costs are incrementally higher due to the new CBA methodology: the considered area is calculated based on the size of the surface of the road in square meters of the parallel road I/65 as well as the expressway R1. However, there is a notable cost saving in the toll collection costs and therefore the overall cost of operation and maintenance of the infrastructure is lower.

**Evaluation of the economic analysis**

The cost benefit ratio (B/C) decreased from **3,47** to **2,84**. The decrease of B/C value was caused mainly due to lower values of the indicators below, as well as due to the fact that the ex-post CBA was recalculated using the currently applicable methodology that contains different rates (such as lower Value of time), and it also states a compulsory calculation of externalities (environmental pollution, greenhouse gas emissions, noise).

Despite the reduction in the cost benefit ratio we can conclude that the project is beneficial for society as the indicator B/C remains above value 1.

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| **Passenger travel time savings** | Original  **375 068 542 EUR** | Updated  **316 222 135 EUR** | **-15,69%** |

Time savings have been reduced because of the use of the real traffic intensities, which are lower than those assumed by the transport model.

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| **Fuel costs savings** | Original  **17 688 088 EUR** | Updated  **3 038 166 EUR** | **-82,82%** |
| **Other vehicle operating costs savings** | Original  **-3 114 334 EUR** | Updated  **-7 993 054 EUR** | **-156,65%** |

Vehicle operating costs consist of the fuel consumption costs (where savings are generated) and other operating costs of vehicles, such as depreciations, where the projects generates higher costs in the situation With the Project.

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| **Accident costs savings** | Original  **79 902 019 EUR** | Updated  **54 919 095 EUR** | **-31,27%** |

The accident rate was calculated on the basis of the number of accidents for years 2008 – 2018 (parallel road), respectively 2011 – 2018 (expressway R1).

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| **Emission costs savings** | Original  **- EUR** | Updated  **35 434 861** | **-** |

Emission savings were not quantified in the original CBA. Based on the incremental fuel consumption (these form the basis for calculation of emissions) over the entire reference period significant savings were also calculated.

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| **Noise costs savings** | Original  **- EUR** | Updated  **9 745 117 EUR** | **-** |

Savings in the noise costs were not quantified in the original CBA. In general, construction of expressway sections means that the population is less exposed to noise from passenger and the freight traffic, which was also confirmed in the analysed section of the expressway.

**Final evaluation**

The CBA's retrospective assessment showed justification for funding the project from EU funds. The financial analysis has confirmed the assumption that the project is unable to fully cover the expenditure of its revenue, and therefore a financial contribution from the European Regional Development Fund is justified. The economic analysis confirmed the efficiency of the public funds expenditures as well as justification of the project, since the project's benefits to the society as a whole, outweigh its costs.