

Ex-post CBA R4 Košice - Milhost'

The Grant Agreement for the expressway project „R4 Košice - Milhost'“ was signed on 30 June 2011. It was a financial contribution for the construction of 14.175 km of the expressway R4 Košice - Milhost'. The Beneficiary (National Motorway Company, hereinafter as “NMC”) received a financial contribution of **EUR 50 303 264**, consisting of the contribution of **EUR 42 757 774** from the European Regional Development Fund (85% of the total amount) and the contribution of **EUR 7 545 490** 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 **55.73% (i.e. 55.73% of the eligible project expenditure was provided from the Operational Programme Transport 2007 - 2013)**. The expressway R4 Košice – Milhost' is in operation since November 2013.

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 2010 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 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 2041 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 has increased from **55.73% to 84.65%**, which means that the contribution from the operational programme resources should currently be higher than those in the Grant Agreement dated in 2011. The increase of the percentage of the financial gap is mainly due to decline of the real income generated by the project as well as higher amount of the investment cost.

Investment cost	original 92 616 653 EUR	updated 97 328 725 EUR	+5.1%
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The stated investment costs are undiscounted and excluding VAT.

Residual value	original 21 480 321 EUR	updated 31 877 367 EUR	+48%
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In accordance with the current CBA manual the updated residual value was recalculated using the "cash flow" method since the project generates net income.

Revenues	original 40 558 284 EUR	updated 14 191 753 EUR	-65%
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Incremental toll revenues are directly dependent on the freight transport intensities. Freight transport intensities on the analyzed 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 R4 was quantified, the updated CBA includes the difference of toll revenues between the R4 section and the parallel road I/68.

Operation & Maintenance costs	original 10 444 774 EUR	updated 2 531 262 EUR	-76%
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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, which is greater for the newly built expressway than for the parallel road I/68.

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. The savings are caused by the method of determining the toll collection costs since the tolled vehicles pass on the built expressway section only through two toll sections, whereas there are many more toll sections on the parallel road I/68.

Evaluation of the economic analysis

The cost benefit ratio (B/C) has decreased from **2.11 to 1.13**. 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).

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.

Passenger travel time savings	original 142 660 297 EUR	updated 42 966 485 EUR	-70%
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Time savings have been reduced because of the use of the real traffic intensities, which are lower than those assumed by the transport model.

Fuel costs savings	original -1 421 444 EUR	updated 2 388 867 EUR	-
General vehicle operating costs savings	original -17 372 624 EUR	updated 14 171 339 EUR	-

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 also generates savings.

Accident costs savings	original 19 546 821 EUR	updated 7 239 213 EUR	-63%
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The accident rate was calculated on the basis of the number of accidents for years 2010 - 2018 (parallel road), respectively 2014 - 2018 (expressway R4).

Emission costs savings	original 0 EUR	updated 14 377 595 EUR	-
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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.

Noise costs savings	original 0 EUR	updated 5 230 365 EUR	-
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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 analyzed 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.