Ex-post CBA D1 Sverepec - Vrtižer

The Grant Agreement for the motorway project „D1 Sverepec - Vrtižer“ was signed on 21 September 2009. It was a financial contribution for the construction of 9.595 km of the motorway D1 Sverepec - Vrtižer. The Beneficiary (National Motorway Company, hereinafter as “NMC“) received a financial contribution of **EUR 263 473 152**, consisting of the contribution of **EUR 223 952 180** from the Cohesion Fund (85% of the total amount) and the contribution of **EUR 39 520 972** 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 **76,97% (i.e. 76,97% of the eligible project expenditure was provided from the Operational Programme Transport 2007 - 2013)**. The motorway D1 Sverepec - Vrtižer is in operation since July 2010.

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 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 decreased from **76.97% to 72.82%,** which means that the contribution from the operational programme resources should currently be a bit lower than those in the Grant Agreement dated in 2009. The increase of the percentage of the financial gap is mainly due to increase of the real income generated by the project as well as an increase in the residual value.

Investment cost	original **316 473 899EUR**	updated **352 379 825 EUR**	**+11.3%**

The stated investment costs are undiscounted and excluding VAT.

Residual value	original **32 647 427 EUR**	updated **46 167 225 EUR**	**+41%**

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 **42 491 022 EUR**	updated **63 326 403 EUR**	**+49%**

Incremental toll revenues are directly dependent on the freight transport intensities. Freight transport intensities on the analyzed motorway section are higher compared to the expected traffic volumes from the original CBA, which results in higher revenues than previously expected in the original CBA.

Operation & Maintenance costs	original **13 907 280 EUR**	updated **14 638 960 EUR**	**+5.3%**

Incremental Operation and maintenance costs are higher, due to the new CBA methodology: the area under consideration in m2 is greater for the newly built motorway than for the I / 61 parallel road.

However, there is a notable cost saving in the toll collection costs. The savings are caused by the method of determining the toll collection costs since the tolled vehicles pass on the built motorway section only through two toll sections, whereas there are many more toll sections on the parallel road I/61.

Evaluation of the economic analysis

The cost benefit ratio (B/C) has decreased from **1.79 to 1.19**. 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 **276 184 416 EUR**	updated **341 201 305 EUR**	**+24%**

Due to the application of real intensities, which are higher than assumed by the transport model in the original CBA, there has been an increase in passenger time savings as opposed to the original estimates.

Fuel costs savings	original **15 813 793 EUR**	updated **570 869 EUR**	**-96%**
General vehicle operating costs savings	original **4 280 965EUR**	updated **- 65 157 669EUR**	**-**

Vehicle operating costs consist of the fuel consumption costs (where savings are generated, although lower than originally expected) and other operating costs of vehicles, such as depreciations, where the project does not generate savings.

Accident costs savings	original **88 719 560 EUR**	updated **59 705 955 EUR**	**-43%**

The accident rate was calculated on the basis of the number of accidents for years 2008 - 2018 (parallel road), respectively 2010 - 2018 (motorway D1 Sverepec - Vrtižer).

Emission costs savings	original **0 EUR**	updated **8 040 700 EUR**	**-**

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 **24 399 370 EUR**	**-**

Savings in the noise costs were not quantified in the original CBA. In general, construction of motorway 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 motorway.

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 Cohesion 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.