CALCULATION OF ECONOMIC EFFICIENCY · ANNEX No. 5 TO CONTRACT No. 02/XADO

ZIL-MMZ-45021: treatment instead of overhaul with no downtime for the truck

JSC Imstalkon, AMF-1 · approved by S. G. Yesmukanov, Director of AMF-1, and N. O. Nakpebekov, Director of GAYER LLP, signatures and stamps of both parties

Republic of Kazakhstan · 19.06.2001 · Contract No. 02/XADO of 19.06.01

PRODUCT

XADO technology

treatment under Contract No. 02/XADO of 19.06.01

OBJECT

ZIL-MMZ-45021 truck

engine and cylinders · gearbox · rear axle final drive

DOCUMENT TYPE

Calculation of economic efficiency
Annex No. 5 to Contract No. 02/XADO

VEHICLE	ANNUAL MILEAGE	WHAT WAS TREATED
ZIL-MMZ-45021	**36000 km**	engine and cylinders · gearbox · rear axle final drive

Four units were treated, whereas the alternative in the calculation is a major overhaul of the engine alone: the gearbox and the rear axle final drive are not included in its cost.

Key result

↓ 47.9 %

repair cost of the vehicle, 62096 → 32323 tenge

Repair — what was compared with what

OPTION	SCOPE OF WORK	COST
Major engine overhaul	Engine, standard method; gearbox and rear axle final drive not included	**62096 tenge**
Treatment with XADO technology	Engine and cylinders, gearbox, rear axle final drive	**32323 tenge**
Repair effect (dR)	Cost difference — with a larger number of units restored	**29773 tenge**

The overhaul cost is the planned costing of AMF-1, JSC Imstalkon; the treatment cost is the contract price under Contract No. 02/XADO of 19.06.01.

Fuel — how the annual saving was built up

PARAMETER	VALUE	SOURCE
Fuel consumption	**38 l/100 km**	Vehicle specification data
Reduction in fuel consumption	**12.5 %**	Annex No. 4 to Contract No. 02/XADO
Annual mileage	**36000 km**	Records of the AMF-1 vehicle depot
Diesel fuel price	**30 tenge/l**	Prices in force as of June 2001
Fuel effect (dE)	**51300 tenge**	Formula from the document: dE = P · dP · T · C / 100

The calculation starts from the specification consumption figure: the document expressly states that actual fuel consumption is higher, so the saving is taken at its lower bound.

Conclusion of the calculation

The calculation of economic efficiency — Annex No. 5 to Contract No. 02/XADO of 19.06.01 — was approved by both parties: by the Director of AMF-1, JSC Imstalkon, and by the Director of GAYER LLP. The worn vehicle was offered two options: a scheduled major overhaul of the engine alone for **62096 tenge**, or treatment with XADO technology of four units at once — engine and cylinders, gearbox, rear axle final drive — for **32323 tenge**. The saving on repair is **29773 tenge**, the saving on diesel fuel over a year is **51300 tenge**. Verbatim from the document: “the expected economic effect from the introduction of ‘XADO technology’ amounts to **81073 tenge**”. The calculation is deliberately conservative: it is based on the specification fuel consumption, although the document notes that the actual figure is higher, and the benefit of the vehicle not standing idle for repair is not included in the total at all.

XADO

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The document contains a calculation of the expected economic effect at June 2001 prices; it holds no technical measurements, and the calculation was drawn up by the contractor performing the treatment and approved by the customer. The results relate to the ZIL-MMZ-45021 truck of the AMF-1 fleet of JSC Imstalkon at an annual mileage of 36000 km — with different mileage, prices and condition of the units the figures will differ. The original document with signatures and stamps is published in full and available for download.