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Infrastructure Maintenance 1

Railways Pre-Investment study and Pilot train Baku - Tbilisi - Batumi/Poti



Final Report

Financing Memorandum Azerbaijan State Railways

October 1997

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Foreword

This offering memorandum outlines the rail development (investment and maintenance) plans drawn up for the Azerbaijan State Railways. The objective of the proposed development plan is to support and deepen the restructuring process which the Azerbaijan State Railways has initiated. In this context, the memorandum discusses the railway's financial performance with respect to current operations, and planned restructuring actions. Projected cash flows, and profit and loss statements drawn up for the Azerbaijan State Railways are presented.

Overall, this memorandum is understood as a so called financing memorandum, proposal or prospectus aimed at providing lenders with the information needed to make a preliminary credit decision regarding the proposed development plans. It shall be the basis of decision-making for financial institutions. 1 Aze

Azerbaijan State Railways situation

The government of Azerbaijan is presently in the process of transition from a centrally directed economy to one driven by market forces. The disintegration of the former Soviet Union and the adopted path of the government towards marketeconomy dominate the economic picture in the country. The railway sector is particularly affected by the emergence of the above path towards a liberalised market economy.

Generally, the following statements can be made concerning the development of transport services and the financial situation of the Azerbaijan State Railways:

- Transport services in 1995 reached only a fraction of those in 1989;
- Release of formerly subsidised prices, (e.g. for material, energy and repairs, as well as renewed valuation of fixed assets in conjunction with declining currency value) have caused cost explosion and increase of tariffs;
- Steep drop in transport services, especially in freight traffic brought about significant reduction in railway revenues.
- Dissolution of the centralised system of revenue allocation through the former Ministry of Railways of the USSR (MPS) in Moscow. Thus, re-organisation of the revenue appropriation has led to revenue losses.

The Azerbaijan State Railways is considering the introduction of important changes, foremost concerned are restructuring of organisational policy, operations management, and rehabilitation. Priority attention is found important to be paid to the system's rehabilitation since track equipment has been run down and there is not sufficient financing. The Azerbaijan State Railways needs considerable support in order to accomplish and sustain the adopted liberalisation and restructuring process. Rehabilitation of the system requires enormous financial investments, which can only be sustained through <u>external financing</u>. Particular financial assistance is needed for coverage of capital and operational expenses.

Railway multi-annual development plan

A cohesive development plan calling for restructuring of the accounting system, and organisational reforms within the railway and in the environment in which it operates has been carefully prepared and evaluated. This prospectus will, however, focus solely on the requirements developed within the scope of the investment and maintenance plans for the Azerbaijan State Railways to increase performance of the rail system in line with the restructuring concept.

It contains projected investment and rehabilitation costs subgrouped into six categories:

- 1. Bridges
- 2. Permanent way
- 3. Permanent way maintenance equipment
- 4. Rolling stock
- 5. Signalling
- 6. Telecommunications

The proposed modernisation requirements (both investment and maintenance) cover the period from 1998 until 2015; they are considered as important to ensure success, and sustainability of the adjustment and reform measures adopted. Both, investment and maintenance requirements are based on the assumption that materials and equipment be obtained locally - within the region whenever possible rather than to import more expensive products from Western Europe.

2.1 Multi-annual investment plan

Separate estimates are conducted for each of the above mentioned categories of investments defined as capital outlays needed to bring the rail line up to the required level. The investment costs consist of expenditures for new equipment, construction and long-term renovations where needed.

Total and individual financings required for new investments are presented in Table 1. However, more detailed tables with breakdowns of individual costs are contained in Annex 1.

Year (Millions of US \$)	1998-2000	2001-2005	2006-2010	2011-2015	Total
Bridges (1.5% of total financing)	4.9	5.3	0.9	-	11.1
Permanent way (13% of total financing)	43.2	46.4	8.0	-	97.6
Permanent way maintenance (5.4% of total financing)	21.2	19.4	-	-	40.6
Rolling stock (51% of total financing)	10.0	2.9	85.0	283.2	381.1
Workshops (2.6% of total financing)	10.3	9.3	-	-	19.6
Signalling (20% of total financing)	13.2	72.9	36.0	33.2	155.3
Telecommunications (5.1% of total financing)	13.2	18.2	6.6	-	38.0
Total (% financing)	116.0 (15.6%)	174.4 (23.4%)	136.5 (18.3%)	316.4 (42.5%)	743.3

Table 1: Required investments for construction and equipment - Azerbaijan

* The first three years represent priority years for investment requirements.

Source: Technical study conducted by TEWET / Deutsche Eisenbahn-Consulting, 1997.

Bridges make up only 1.5% of total financing requirements over the entire investment period. In contrast, rolling stock needs amount to 51% of total financial needs which is not surprising due to capital intensity of these investments. Second in the ranking position are signalling investments with about 20% of the total investment needs. Most investment (about 42%) is needed in the last years due to late rolling stock acquisition.

2.2 Multi-annual maintenance plan

Annual maintenance costs are estimated in Table 2 based on the level of maintenance required to uphold the line at the level to be attained through the recommended investments. Failure to attain these maintenance levels will result in large repairs, and deterioration of the assets already in the projected lifespan of their use.

(5.8% of total financing)

(7.5% of total financing) Telecommunications

(25% of total financing)

Signalling

% financing

Total

8.3

46.7

166.3

(32.2%)

Total 8.1

142.1

60.9

107.7

30.4

38.9

129.5

517.6

Year (millions of US\$)	1998-2000	2001-2005	2006-2010	2011-2015	
Bridges (1.5% of total financing)	0.4	2.1	2.8	2.8	
Permanent way (27% of total financing)	8.6	36.5	48.5	48.5	
Permanent way maintenance (11% of total financing)	4.3	16.0	20.3	20.3	
Rolling stock (20% of total financing)	18.9	29.7	29.0	30.1	
Workshops	1.8	9.4	9.6	9.6	

3.3

7.5

44.8

(8.6%)

Table 2: Maintenance requirements - Azerbaijan

Permanent way financing needs are highest at about 27% of total requirements. Next in ranking comes maintenance of telecommunications with about 25%, and rolling stock which requires overall about 20% of total financial requirements. In contrast to the proposed investments, maintenance requirements are continuos, and can not be limited in terms of time. Repair of equipment must be conducted throughout the entire period from 1998 until 2015.

18.3

30.3

142.3

(27.5%)

9.0

45.0

164.2

(31.7%)

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Three - four years investment plan

A listing of the investment, and rehabilitation needs that must be given urgent consideration is provided in Table 3. In this context, urgent implies all measures that require immediate investment action within the next three and four years. This information is particularly relevant when lenders are faced with the task of having to select only a limited number of the investment requirements presented above in the recommended improvements. Once again, reliance on local resources is the main underlying assumption for calculation of costs.

Year (Millions of US\$)	1998	1999	2000	2001	Total
Bridges (4.59 % of total)	1.34	1.34	1.34	1.34	5.36
Bridge No 56 Baku*	0.25	0.25	0.25	0.25	
Bridges 19 & 20*	0.22	0.22	0.22	0.22	
Bridges 33 & 34**	0.74	0.74	0.74	0.74	
Quarry Equipment	0.13	0.13	0.13	0.13	
Permanent way (37% of total)	14.4	14.4	14.4	0.00	43.2
Line: Tiblisi -Baku (116 km)	7.0	7.0	7.0		
Line: Baku-Tiblisi (84 km)	5.0	5.0	5.0	1.1.1	
Changeover Points***	2.0	2.0	2.0	1.1.1.1	1.000
Crossing Timber Sets	0.4	0.4	0.4		
Permanent way (18% of total)	4.60	9.76	6.84	0.00	21.2
maintenance					
Rolling stock (8.61% of total)	2.72	2.34	4.98	0.00	10.04
Major Overhauls	2.70	2.30	2.50		
Scrapping Costs	0.02	0.04	0.04		
Wagon Acquisition	0.00	0.00	2.48		
Workshops (8.93% of total)	1.08	4.65	4.65	0.00	10.38
Investment	0.64	4.50	4.50		
Equipment	0.44	0.15	0.15		
Signalling (11.3% of total)	3.6	3.6	3.2	2.8	13.2
Telecomm. (11.3% of total)	3.3	3.3	3.3	3.3	13.2
Total Bank Financing	31.04	39.39	38.71	7.44	116.58
(% Financing)	26 %	33.6 %	33.4%	6%	100%

Table 3: Three - Four year investment plan proposal

In urgent need of repair, ** Priority measures to be undertaken,

*** Bi-directional

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Bridges itemised in Table 3 are in poor condition and substantial portions of them require renewal or urgent maintenance. These include bridges numbered 56, 19 & 20 and 33 and 34. Immediate modernisation of these bridges require about US\$ 5 million up to the year 2001. This makes up about 4.59% of the total financing required.

Recommended actions to develop the permanent way require about 37% of total investment requirements with a total outlay of US\$ 43 million up to the year 2000. Investments are required to cover the line connection between Tiblisi and Baku which is about 116 km, as well as 84 km the other direction from Baku to Tiblisi. Change over points and crossing timer sets also require immediate investments.

Annex 1 indicates all investment measures required to rehabilitate the permanent way in Azerbaijan. To mention, these include investment in

- a) track engines.
- b) ballast regulating machines,
- c) excavators,
- d) trolley for bridge inspection as well as
- e) miscellaneous machinery and equipment.

Permanent way maintenance need estimates cover 18% of total investment costs. Rolling stock investment needs over the next ten years are about US\$ 10 million up to the year 2000, and make up about 8 % of total urgent investment costs. This includes locomotive and wagon acquisition in addition to major overhauls and scrapping costs.

The priorities in the signalling shall include the immediate replacement of signals, points and level crossings next to improvements in repair shop facilities. Therefore, US\$ 13.2 million is required within the next three years. With regard to telecommunications all measures outlined in Annex 1 are considered important and need attention (cable equipment, transmitting equipment, etc.). Therefore, additional US\$ 13.2 million will be required up to 2000. This implies about 11% of total investment costs required urgently for the restructuring project.

The schedule for capital financing of the above proposed projects best follows the proposed investment schedule as presented in Table 3. This means that 26% of the financing requirements would be needed for allocation in 1998, and additional 33.6% in 1999, 33.4% in 2000, and about 6% in 2001.

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Multi-annual development plan appraisal

The proposed investment plans from 1998 until 2015, as defined, consists of different components, and thus will be submitted to an overall evaluation to assess the financial viability as a package attributable to the entire rail system. This is conducted using the traditional dynamic technique of the "Internal Rates of Return" (IRR). The IRR provides an objective basis for evaluating and selecting the investment proposals.

To determine the IRR, cash flow schedules are set up based on:

- investment costs,
- net income before depreciation derived from:
 - \Rightarrow revenues from passenger and freight traffic,
 - ⇒ costs including the proposed maintenance costs, personnel costs (passenger and freight), cost of energy, other costs,
 - \Rightarrow tax required depreciation, and taxes.

Due to insufficient current information on international financing terms and lending conditions, the cash flow calculations have ignored the integration of interest and principal repayments throughout the entire period. Two different cash flow schedules are mapped out and presented whereby the basic financial scenario uses a somewhat optimistic forecast. These are a:

- · base case optimistic cash flow and
- pessimistic cash flow

scenarios, whereby for the pessimistic case, the following variables have been <u>reduced</u> and tested for their effects:

- Quantity transported in total (kilo tons):
 - \Rightarrow Year 2000: 64% reduction,
 - \Rightarrow Year 2010: 69% reduction,
 - ⇒ Year 2015: 68% reduction,
- Passenger and goods transport performance (mill. ton kilometres):
 ⇒ Year 2000: 62% reduction.
 - \Rightarrow Year 2010: 66% reduction,
 - ⇒ Year 2015: 65% reduction,
- Goods transport (goods exported and domestic transport, kilo tons):
 - \Rightarrow Year 2000: 66% reduction,
 - \Rightarrow Year 2010: 66% reduction,
 - \Rightarrow Year 2015: 65% reduction.

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Further detailed information on the assumptions used are available in the annex not presented in the memorandum.

An additional basic case and pessimistic cash flow forecasts was set up to assess the financial viability of the project without infrastructure investment. Without infrastructure is understood as the feasibility of operating the system with investments only in signalling, telecommunications, rolling stock, and workshop.

Finally, section 4.2 provides multiyear income statements developed to present how the activities of the railways add to the net worth of the organisation. It indicates the availability of own revenues for financing the required investments. The net income calculation integrates all costs including maintenance, personnel, energy, amortisation, and other costs, but for investment costs.

4.1 Cash flow forecast (1998-2015)

Predictions regarding the financial desirability of railway operations inclusive the proposed investments are presented for scenarios <u>with infrastructure investments</u> and <u>without</u>, and each for the optimistic and pessimistic cases.

4.1.1 Cash flow with infrastructure investment

The base case cash flow outlook provides an IRR of 128% representing the implied net yield of the project. This is the IRR necessary to discount the cash streams to cover the cash outlays. Once again, this result derives from optimistic assumptions of net income before depreciation whereby revenues are higher and costs are lower than expected in the worse case. In addition, interest and loan repayment schedules are not integrated in the cash flow calculation. Overall, the IRR results are more optimistic than they would be if actual information on financing the investment requirements were available and integrated into the model.

Table 4: Cash Flow Statement, Trans- Caucasian Railway

Financial Plan AGZD: Optimistic Variant

Figures in USD'millions

Year	Permanent Way	Bridges	Equipment	Rolling Stock	Workshops Equipment	Signalling	Telecomm.	Total Investments	Net Income before Depr.	Incremental Cash Flow
1998	14.40	1.64	4.60	2.70	1.05	3.60	3.30	31.29	11.80	-19,4
1999	14.40	1.64	9.76	2.30	4.65	3.60	3.30	39.65	45.23	-13.90
2000	14.40	1.64	6.84	4.98	4.65	3.20	3.30	39.01	78.67	25.7
2001	14.40	1.64	3.43	2.90	4.65	2.80	3.30	33.12	89.12	81.70
2002	8.00	0.91	3.41		4.65	22.00	4.50	43.47	99.58	137.8
2003	8.00	0.91	3.41			12.60	4.10	29.02	110.04	218.8
2004	8.00	0.91	0.55			10.50	3.70	23.66	120.50	315.73
2005	8.00	0.91	8.64			13.00	3.20	33.75	130.96	412.9
2006	8.00	0.91				14.90	2.80	26.61	141.42	527.7
2007					•	10.20	2.20	12.40	151.88	667.2
2008						6.50	2.20	8.70	162.34	820.8
2009						8.10	2.20	10.30	172.79	983.3
2010				85.24		5.70		90.94	183.25	1075.67
2011				28.00		5.70		33.70	196.51	1238.4
2012				48.00		8.10		56.10	209.77	1392.1
2013				56.00		5.70		61.70	223.02	1553.4
2014				56.00	•	5.70		61,70	236.28	1728.0
2015				95.24		8,10		103.34	249.54	1874.2
Total	97.60	11.11	40.64	381.36	19.65	150.00	38.10	738.46		
Res. Value	41.50	7.18	7.56	330.51	12.12	56.70	2.80			458.3
	· · · ·						Internal Rate	of Return		128.04%

The pessimistic cash flow analysis is presented in Table 5. Results show negative cash flows during the entire period from 1998 - 2015. The discount rate necessary to equate present value of cash inflows to cash outflows is negative. This is the case even though financing of operations and investments were not integrated into the calculation. This implies non-viability of the project unless there is more cash inflow, and/or funding available to cover the cash outflows.

Trans-Caucasian Railway

Table 5: Cash Flow Statement, Trans- Caucasian Railway

Financial Plan AGZD: Pessimistic Variant

Figures in USD millions

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Year	Permanent Way	Bridges	Equipment	Rolling Stock	Workshops Equipt	Signalling	Telecomm	Total Investments	Net Income before Depr.	Incremental Cash Flow
1998	14.40	1.64	4.60	270	0.94	3.60	3.30	31.18	3.62	-27.5
1999	14.40	1.64	9.76	231	4.65	3.60	3.30	39.66	4.95	-62.2
2000	14.40	1.64	6.84		4.65	3.20	3.30	34.03	6.28	-90.02
2001	14.40	1.64	3.43		4.65	280	3.30	30.22	9.08	-111.16
2002	8.00	0.91	3.41		4.65	22.00	4.50	43.47	11.87	-1427
2003	8.00	0.91	3.41			12.60	4.10	29.02	14.66	-157.12
2004	8.00	0.91	0.55			10.50	3.70	23.66	17.46	-163.3
2005	8.00	0.91	8.64			13.00	320	33.75	2025	-1768
2006	8.00	0.91		28.00		14.90	280	54.61	23.04	-2083
2007						10.20	220	12.40	25.83	-194.9
2008						6.50	220	8.70	28.63	-175.0
2009						8.10	220	10.30	31.42	-153.9
2010				40.00		5.70		45.70	34.21	-165.40
2011						5.70		5.70	33.84	-137.2
2012						8.10		8.10	33.47	-111.8
2013						5.70		5.70	33.10	-84.4
2014						5.70		5.70	32.74	-57.44
2015					_	8.10		8.10	32.37	-33.17
Total	97.60	11.11	40.64	73.01	19.54	150.00	38.10	430.00		
Res. Value	41.50	7.18	7.56	22.16	1206	56.70	280			149.9
			i				Internal Rate	of Return	12. S. S.	

4.1.2 Cash flow without infrastructure investment

Estimations are made to assess the cash flow outcomes when the railway only requires coverage of operating expenses. The purpose is to distinguish the infrastructure investment and maintenance costs from those relating to operations including upkeep of the signalling and telecommunications networks. As in the above case, the estimations are made with the exclusion of payment requirements for financing the operations and investments. It is assumed that the infrastructure investments are resumed by the government. This is in accord with current Western European practices where it is considered that the upkeep of the infrastructure is an unfair burden to a railway. Results show that under the optimistic variant the Azerbaijan State Railways would be in a desirable and sustainable situation.

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Table 6: Cash Flow Statement, Trans- Caucasian Railway

Financial Plan AGZD: Optimistic Variant (Without Infrastructure)

Figures in USD'millions

Year	Rolling Stock	Workshops Equipment	Signalling	Telecomm.	Total Investments	Net Income before Depr.	Cash Flow
1998	2.70	1.05	3.60	3.30	10.65	8.85	-1.80
1999	2.30	4.65	3.60	3.30	13.85	50.47	34.82
2000	4.98	4.65	3.20	3.30	16.13	83.14	101.83
2001	2.90	4.65	2.80	3.30	13.65	93.15	181.33
2002		4.65	22.00	4.50	31.15	103.16	253.34
2003	1		12.60	4.10	16.70	113.17	349.81
2004			10.50	3.70	14.20	123.18	458.80
2005			13.00	3.20	16.20	133.20	575.80
2006			14.90	2.80	17.70	143.21	701.30
2007			10.20	2.20	12.40	153.22	842.12
2008			6.50	2.20	8.70	163.23	996.65
2009			8.10	2.20	10.30	173.24	1159.59
2010	85.24		5.70		90.94	183.25	1251.91
2011	28.00		5.70		33.70	196.51	1414.72
2012	48.00		8.10		56.10	209.77	1568.38
2013	56.00		5.70		61.70	223.02	1729.71
2014	56.00		5.70		61.70	236.28	1904.29
2015	95.24		8.10		103.34	249.54	2050.48
Total	381.36	19.65	150.00	38.10	589.11		
Res. Value	330.51	12.12	56.70	2.80			402.13
				Internal Rate	of Return		2115.48%

Even under the pessimistic variant Azerbaijan State Railways would obtain a positive IRR and a positive cash flow within ten years. The overall conclusion is that AGZD would under the favourable variant be in a position to cover financing costs.

Table 7: Cash Flow Statement, Trans- Caucasian Railway

Financial Plan AGZD: Pessimistic Variant (Without Infrastructure)

Figures in USD'millions

Year	Rolling Stock	Workshops Equipt	Signalling	Telecomm.	Total Investments	Net income before Depr.	Cash Flow
1998	2.70	0.94	3.60	3.30	10.54	8.10	-2.45
1999	2.31	4.65	3.60	3.30	13.86	9.43	-6.88
2000		4.65	3.20	3.30	11.15	10.76	-7.28
2001		4.65	2.80	3.30	10.75	14.35	-3.67
2002		4.65	22.00	4.50	31.15	17.95	-16.87
2003			12.60	4.10	16.70	21.55	-12.02
2004			10.50	3.70	14.20	25.15	-1.08
2005			13.00	3.20	16.20	28.74	11.46
2006	28.00		14.90	2.80	45.70	32.34	-1.90
2007			10.20	2.20	12.40	35.94	21.64
2008			6.50	2.20	8.70	39.53	52.48
2009			8.10	2.20	10.30	43.13	85.31
2010	40.00		5.70	12	45.70	46.73	86.34
2011			5.70		5.70	46.72	127.36
2012			8.10		8.10	46.71	165.97
2013			5.70		5.70	46.70	206.97
2014			5.70		5.70	46.69	247.97
2015			8.10		8.10	46.69	286.55
Total	73.01	19.54	150.00	38.10	280.65		_
Res. Value	22.16	12.06	56.70	2.80			93.72
				Internal Rate	of Return		35.85%

4.2 Income-statement forecast

This section presents a summary of the Azerbaijan State Railways revenues and expenses in selected accounting periods: 1995, 1997, 2000, 2010, 2015. Revenue from transportation services, and costs of transportation services are assessed individually and interlaced in the income statement to evaluate the financial situation.

The calculation and composition of the individual figures are contained in Tables 8 and 9. Once again, they are tested for the effects of optimistic and pessimistic scenarios on the net income availability. In general, the assessment of the financial situation is based on the following main assumptions:

- 1. The exchange rate (the national currency of Manat related to US\$) remains unchanged throughout the considered period whereby US\$ 1 corresponds to 4,400 Manat;
- 2. All costs are normalised based on 1995 prices whereby the inflation index of 2.5 per cent are applied for deflation of costs;
- 3. Interest payments on possible loans, which could be granted to the railways in future (and which are also necessary), are not yet entered as costs in the profit and loss account (e.g. amount of the loan, repayment periods and conditions, interest rates and interest rate scope etc.) are unknown at present. The ratio of 'own

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financing sources' in table point out the financing available for repayment of loans for the respective period under observation;

4. State taxes are 35 per cent based on balance-sheet profits, and they remain unchanged throughout the period of investigation.

The income statement for the optimistic version shows that the net profit after taxes is positive in year 2000. Thus, net profit will be available to cover partially the financing required for the proposed investments.

Table 8: Income statement, Azerbaijan State Railways , optimistic case

Item	1997	2000	2010	2015
Development of Transportation Output				
No. of passengers (millions)	43	52	94	10.7
Passenger-kms (millions)	427	563	1 153	1 330
Average travel distance (km)	99	108	123	124
Tonnes originating (1000 t)	10 863	20 102	29 690	34 825
Net tonne.kms (millions)	2 879	8 805	13 004	15 253
Average lead (km)	265	438	438	438
Average least (Mil)	200	400	400	400
Revenue from Passenger and Freight Transport				
Revenue from passenger transport (1000 US\$)	1,280.4	8,449.5	57,655.0	133,000.0
Revenue from freight transport (1000 US\$)	86,370.0	352,200.0	650,200.0	838,915.0
Total revenue (1000 US\$)	87,650.4	360,649.5	707,855.0	971,915.0
Unit revenue in passenger transport (US\$/passkm)	0.0030	0.0150	0.0500	0.1000
Unit revenue in freight transport (US\$/tkm)	0.0300	0.0400	0.0500	0.0550
			E. Martin Astronomica	
Prime costs of freight transport (1000 1186)	64 062 0	200 500 0	200 100 0	500 400 7
Prime costs of freight transport (1000 US\$)	61,963.9	206,586.0	362,189.2	500,420.7
Prime costs of passenger transport (1000 059)	10,934.0	22,954.1	40,243.2	55,602.3
Total prime costs (1000 US\$)	72,898.8	229,540.6	402,432.4	556,023.0
Proportional coefficient prime costs freight transport of total costs	0.85	0.90	0.90	0.90
Proportional coefficient prime costs passenger transport of total costs	0.15	0.10	0.10	0.10
Unit cost freight transport (US\$/tkm)	0.0215	0.0235	0.0279	0.0328
Unit cost passenger transport (US\$/passkm)	0.0256	0.0407	0.0349	0.0418
Difference unit revenue vs. unit cost passenger transport	-0.0226	-0.0257	0.0151	0.0582
Difference unit revenue vs. unit cost freight transport	0.0085	0.0165	0.0221	0.0222
Selected Cost Components	States - Contract		States and an	
Personnel costs (1000 US\$)	10,560.0	80,000,0	175,000.0	280,000,0
Percentage of total costs (%)	14,49	34.85	43.49	50.36
of which personnel costs for freight transport (1000 US\$)	8,976.0	72.000.0	157,500.0	252,000,0
of which personnel costs for passenger transport (1000 US\$)	1,584.0	8,000.0	17,500.0	28 000 0
costs for traction energy (1000 US\$)	10,637,5	24 141 7	40 523 9	50 631 9
Percentage of total costs (%)	14 59	10.52	10.07	9 11
of which costs for freight transport (1000 US\$)	9 041 9	21 727 5	36 471 5	45 568 7
of which costs for passenger transport (1000 US\$)	1 595 6	2 414 2	4 052 4	5 063 2
of which fuel (1000 US\$)	2 028 8	4 604 3	7 728 8	9,656,6
of which electric power (1000 LIS\$)	8 608 7	10 537 3	22 705 1	40,075.0
	0,000.7	19,007.0	52,795.1	40,975.2
Repair costs (1000 US\$)	26,136.4	52,272.7	79,545.5	90,909.1
Percentage of total costs (%)	35.85	22.77	19.77	16.35
of which costs for freight transport (1000 US\$)	22,215.9	47.045.5	71,590.9	81.818.2
of which costs for passenger transport (1000 US\$)	3,920.5	5,227.3	7,954.5	9,090.9
(1000 1100)	1 7 6 7			
costs for other energy usage (1000 US\$)	4,785.5	9,642.9	15,409.0	18,922.4
Percentage of total costs (%)	6.56	4.20	3.83	3.40
of which fuel (1000 US\$)	1,146.2	2,309.7	3,690.8	4,532.4
of which electric power (1000 US\$)	3,639.2	7,333.2	11,718.1	14,390.0
Other costs (1000 US\$)	20,779.4	63,483,3	91,954 1	115,559 7
Percentage of total costs (%)	28.50	27.66	22.85	20.78

Trans-Caucasian Railway

Item	1997	2000	2010	2015
of which costs for material (1000 US\$)	8 790 9	35 500 0	45 454 5	53 636 4
Percentage of total costs (%)	12.06	15.47	11.29	9.65
of which amortisation (1000 US\$)	8,560.3	24,310,3	42.010.3	57,026.0
Percentage of total costs (%)	11.74	10.59	10.44	10.26
of which other costs (1000 US\$)	3,428.2	3,673.0	4,489.3	4,897.4
Percentage of total costs (%)	4.70	1.60	1.12	0.88
Sum prime costs (1000 US\$)	72,898.8	229,540.6	402,432.4	556,023.0
Cost Coverage			and the second	
Cost coverage passenger transport (1000 US\$)	-9,654.4	-14,504.6	17,411.8	77,397.7
Cost coverage freight transport (1000 US\$)	24,406.1	145,613.4	288,010.8	338,494.3
Cost coverage total transport (1000 US\$)	14,751.6	131,108.9	305,422.6	415,892.0
Profit Calculation				to and a control of
Net profit before tax requ. depreciation, interest and tax (1000 US\$)	14,751.6	131,108.9	305,422.6	415,892.0
Tax required depreciation (1000 US\$)	8,560.3	24,310.3	42,010.3	57,026.0
Net profit before interest and tax (1000 US\$)	6,191.3	106,798.6	263,412.3	358,866.0
Net profit before tax (1000 US\$)	6,191.3	106,798.6	263,412.3	358,866.0
Taxes (1000 US\$)	2,167.0	37,379.5	92,194.3	125,603.1
Net profit after tax (1000 US\$)	4,024.4	69,419.1	171,218.0	233,262.9
Financial Resources				
Own resources				
net profit after tax (1000 US\$)	4,024.4	69,419.1	171,218.0	233,262.9
tax required depreciation (1000 US\$)	8,560.3	24,310.3	42,010.3	57.026.0
Sum of own resources (1000 US\$)	12 584 7	93 729 4	213 228 3	290 288 9

In the pessimistic case the financial situation is rather negative reaching a climax in 2000, with a negative profit of US\$ -0.46 million after tax. The railways will not be able to pay taxes. The reason for this is, above all, the increased running expenditure of repair and capital cost within the framework of modernisation program. This financing problem can only be overcome by granting a long-term loan. The repayment should not start before a repayment-free period of five years, as only after this time, there will be sufficient means for annual instalments for refinancing from the net profit of the railways.

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Table 9: Income statement, Azerbaijan State Railways, pessimistic case

item	1997	2000	2010	2015
Development of Transportation Output		1.1200100000		
No. of personners (millions)	36	33	4.5	47
Decender kmc (millions)	302.0	380.6	590.9	628.6
Average travel distance (km)	100 1	115.3	131.3	133.7
Toppes originating (1000 t)	10 173 0	12 002 0	20 510 0	23 685 0
Net toppe.kms (milions)	2 696 0	5 469 0	8 638 0	23,003.0
Average lead (km)	2,090.0	421.0	421.0	421.0
Average lead (NIII)	205.0	421.0	421.0	421.0
Revenue from Passenger and Freight Transport				
Revenue from passenger transport (1000 US\$)	982.3	3,806.0	17,727.0	31,430.0
Revenue from freight transport (1000 US\$)	72,792.0	164,070.0	345,520.0	448,695.0
Total revenue (1000 US\$)	73,774.3	167,876.0	363,247.0	480,125.0
Unit revenue in passenger transport (US\$/passkm)	0.0	0.0	0.0	0.1
Unit revenue in freight transport (US\$/tkm)	0.0	0.0	0.0	0.0
Prime Costs of Transport		1 1 000 1		100 011 0
Prime costs of freight transport (1000 US\$)	58,859.7	147,960.4	287,850.0	400,611.9
Prime costs of passenger transport (1000 US\$)	10,387.0	9,444.3	18,373.4	25,571.0
Total prime costs (1000 US\$)	69,246.7	157,404.6	306,223.4	426,182.9
Proportional coefficient prime costs freight transport of total costs	0.9	0.9	0.9	0.9
Proportional coefficient prime costs passenger transport of total costs	0.2	0.1	0.1	0.1
Unit cost freight transport (US\$/tkm)	0.0	0.0	0.0	0.0
Unit cost passenger transport (US\$/passkm)	0.0	0.0	0.0	0.0
Difference unit revenue vs. unit cost passenger transport	0.0	0.0	0.0	0.0
Difference unit revenue vs. unit cost freight transport	0.0	0.0	0.0	0.0
Selected Cost Components				
Personnel costs (1000 LIS\$)	10 200 0	60,000,0	150 000 0	240,000,0
Percentare of total costs (1000 0000)	14 7	38.1	49.0	56.3
of which perconnel costs for freight transport (1000 LISS)	8 670 0	56 400 0	141 000 0	225 600.0
of which personnel costs for nessenger transport (1000 US\$)	1,530.0	3 600 0	9,000,0	14 400 0
of which personnel costs for passenger transport (1000 000)	1,000.0	3,000.0	9,000.0	14,400.0
costs for traction energy (1000 US\$)	10,250.7	16,940.6	29,063.2	35,504.5
Percentage of total costs (%)	14.8	10.8	9.5	8.3
of which costs for freight transport (1000 US\$)	8,713,1	15,924.2	27,319,4	33,374.2
of which costs for passenger transport (1000 US\$)	1,537.6	1,016.4	1,743.8	2,130.3
of which fuel (1000 US\$)	1,955,0	3 230 9	5 543 0	6,771.5
of which electric power (1000 US\$)	8 295 7	13 709 7	23 520 2	28 733 0
	0,200.7	10,700.7	20,020.2	20,700.0
Repair costs (1000 US\$)	24,394.0	32,420.5	52,883.0	59,457.1
Percentage of total costs (%)	35.2	20.6	17.3	14.0
of which costs for freight transport (1000 US\$)	20,734.9	30,475.3	49,710.0	55,889.7
of which costs for passenger transport (1000 US\$)	3,659.1	1,945.2	3,173.0	3,567.4
(1000 1100)	4 770 4	7 074 0	11.010.0	10.017.0
costs for other energy usage (1000 US\$)	4,779.4	7,274.8	11,640.0	13,947.6
Percentage of total costs (%)	6.9	4.6	3.8	3.3
of which fuel (1000 US\$)	1,144.8	1,742.5	2,788.1	3,340.8
of which electric power (1000 US\$)	3,634.6	5,532.3	8,851.9	10,606.8
Other costs (1000 LIS\$)	10 622 6	40.769.9	62 627 1	77 072 7
	19.0// 0	40.000	02.03/ 1	11.7131

Trans-Caucasian Railway

Item	1997	2000	2010	2015
of which costs for material (1000 US\$)	8,204.8	22,018.1	30,218.8	35,079.7
Percentage of total costs (%)	11.85	13.99	9.87	8.23
of which amortisation (1000 US\$)	7,989.6	15,077.7	27,929.1	37,296.6
Percentage of total costs (%)	11.54	9.58	9.12	8.75
of which other costs (1000 US\$)	3,428.2	3,673.0	4,489.3	4,897.4
Percentage of total costs (%)	4.95	2.33	1.47	1.15
Cost Coverage				
Cost coverage passenger transport (1000 US\$)	-9,404.8	-5,638.3	-646.4	5,859.0
Cost coverage freight transport (1000 US\$)	13,932.3	16,109.6	57,670.0	48,083.1
	4,527.0	10,471.4	57,025.0	33,342.1
Profit Calculation				44 1 12
Net profit before tax requ. depreciation, interest and tax (1000 US\$)	4,527.6	10,471.4	57,023.6	53,942.1
Tax required depreciation (1000 US\$)	7,989.6	15,077.7	27,929.1	37,296.6
Net profit before tax (1000 US\$)	-3,462.0	-4,606.3	29,094.5	16,645.5
Taxes (1000 US\$)	0.0	0.0	10,183.1	5,825.9
Net profit after tax (1000 US\$)	-3,462.0	-4,606.3	18,911.5	10,819.6
Financial Resources				
Own resources				
net profit after tax (1000 US\$)	-3,462.0	-4,606.3	18,911.5	10,819.6
tax required depreciation (1000 US\$)	7,989.6	15,077.7	27,929.1	37,296.6
Sum of own resources (1000 US\$)	4,527.6	10,471.4	46,840.5	48,116.2

Tacis

Trans- Caucasian Railway

Annex 1 - Table 1

TRACECA

Forecast Requirements - Permanent Way: Azerbaijan

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
New Investments:	\vdash																		
Line: Tbilisi - Baku:-Item 1 -12: 116km	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.7
Line: Baku - Tbilisi:-Item 1 - 7: 84km	5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2
Changeover Points - Both Directions	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
Crossing Timber Sets	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Total New Investments	14.4	14.4	14.4	14.4	8.0	8.0	8.0	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.2
Maintenance Requirements:																			
Line: Tbilisi - Baku:-Item 1 -12: 116km	0.7	1.4	2.1	2.8	3.6	4.4	5.2	6.0	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	13.5	100.5
Line: Baku - Tbilisi:-Item 1 - 7: 84km	0.5	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	4.0	35.3
Changeover Points - Both Directions	0.2	0.4	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6	14.0
Crossing Timber Sets	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	2.5
Total Maintenance	1.4	2.9	4.3	5.7	6.5	7.3	8.1	8.9	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	19.4	152.2
Depreciation:																			
Line: Tbilisi - Baku:-Item 1 -12: 116km	0.3	0.6	0.8	1.1	1.4	1.8	2.1	2.4	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	5.4	40.2
Line: Baku - Tbilisi:-Item 1 - 7: 84km	0.2	0.4	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6	14.1
Changeover Points - Both Directions	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	5.6
Crossing Timber Sets	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
Total Depreciation	0.6	1.1	1.7	2.2	2.6	2.9	3.2	3.5	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	7.7	59.9

Trans- Caucasian Railway

TRACECA

Forecast Requirements - Permanent Way Maintenance Equipt.: Azerbaijan

Annex 1 - Table 2

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
New Investments:																			
Misc. Machinery & Equipt.	2.50	2.50	2.50	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00
Track Engines	0.57	0.57	0.57	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
Ballast Regulating Machine	0.00	1.40	0.00	0.00	0.00	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80
Trolley for Bridge Inspection	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17
Excavators	0.34	0.34	0.34	0.34	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01
Ballast Cleaning Machine	0.00	4.38	0.00	0.00	0.00	0.00	0.00	4.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.76
Sleeper Positioner	0.00	0.00	2.86	0.00	0.00	0.00	0.00	2.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72
Hydraulic Rail Treater	0.00	0.55	0.55	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65
Diesel Motors for UK Crane	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Total New Investments	4.60	9.76	6.84	3.43	3.41	3.41	0.55	8.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.61
Maintenance Requirements:																			
Misc. Machinery & Equipt.	0.25	0.50	0.75	1.00	1.25	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	3.00	24.75
Track Engines	0.06	0.11	0.17	0.23	0.29	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.68	5.64
Ballast Regulating Machine	0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.56	4.20
Trolley for Bridge Inspection	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.23	2.22
Excavators	0.03	0.07	0.10	0.13	0.17	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.40	3.32
Ballast Cleaning Machine	0.00	0.44	0.44	0.44	0.44	0.44	0.44	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	1.75	13.14
Sleeper Positioner	0.00	0.00	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	1.14	8.29

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Total Maintenance	0.47	1.45	2.41	2.47	2.80	3.14	3.20	4.35	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	8.12	64.96
Spare Parts for Ballast Cleaning Mach.	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
Spare Parts for Ballast Machine	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Spare Parts for Sleeper Positioner	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Spare Parts for UK System	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Diesel Motors for UK Crane	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.14
Hydraulic Rail Treater	0.00	0.06	0.11	0.11	0.11	0.11	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.33	2.64
Sleeper Positioner	0.00	0.00	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	1.14	8.29
Ballast Cleaning Machine	0.00	0.44	0.44	0.44	0.44	0.44	0.44	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	1./5	13.14

Trans- Caucasian Railway

TRACECA Tacis

Forecast Requirements - Permanent Way Maintenance Equipt.: Azerbaijan

Annex 1 - Table 2

Depreciation:																			
Misc. Machinery & Equipt. Track Engines	0.25	0.50	0.75	1.00	1.25	1.50	1.50	1.50	1.50	1.50	1.25	0.75	0.75	0.75	0.00	0.00	0.00	0.00	14.75
Ballast Regulating Machine	0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.28	0.28	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.00	0.00	2.24
Trolley for Bridge Inspection	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.12	1.11
Excavators	0.02	0.03	0.05	0.07	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20	1.66
Ballast Cleaning Machine	0.00	0.22	0.22	0.22	0.22	0.22	0.22	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.88	6.57
Sleeper Positioner	0.00	0.00	0.14	0.14	0.14	0.14	0.14	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.57	4.15
Hydraulic Rail Treater	0.00	0.03	0.06	0.06	0.06	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.17	1.32
Diesel Motors for UK Crane	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.14
Total Depreciation	0.35	1.03	1.49	1.78	2.07	2.36	2.39	2.89	2.89	2.89	2.64	2.14	1.86	1.86	1.11	1.11	1.11	2.22	34.19

Trans- Caucasian Railway

Annex 1 - Table 3

TRACECA

Forecast Requirements - Bridges: Azerbaijan

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
New Investments										_									
or Major Repairs:																			
Bridge No. 56 - Baku	0.25	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Bridges 19 & 20 - Km 157 & 700	0.22	0.22	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
Bridges 10 & 11 - Km 111 & 200	0.24	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95
Bridge 31 - Km 234 & 600	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Bridges 33 & 34 - Km 252 & 800	0.74	0.74	0.74	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95
Bridges 41 & 42 - Km 360 & 200	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Bridge No.5 - Km 72 & 300	0.00	0.00	0.00	0.00	0.91	0.91	0.91	0.91	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.55
Quarry Equipt.	0.13	0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Total New Investments	1.64	1.64	1.64	1.64	0.91	0.91	0.91	0.91	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.12
Maintenance Requirements:																		_	
Bridge No. 56 - Baku	0.01	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.10	0.88
Bridges 19 & 20 - Km 157 & 700	0.01	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.09	0.76
Bridges 10 & 11 - Km 111 & 200	0.01	0.02	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.10	0.83
Bridge 31 - Km 234 & 600	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09
Bridges 33 & 34 - Km 252 & 800	0.04	0.07	0.11	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.30	2.58
Bridges 41 & 42 - Km 360 & 200	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.18
Bridge No.5 - Km 72 & 300	0.00	0.00	0.00	0.00	0.05	0.09	0.14	0.18	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.45	2.95
Quarry Equipt.	0.01	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.44
Total Maintenance	0.08	0.16	0.25	0.33	0.37	0.42	0.46	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	1.11	8.70

Trans- Caucasian Railway

Annex 1 - Table 3

TRACECA

Forecast Requirements - Bridges: Azerbaijan

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Depreciation:																		-	_
Bridge No. 56 - Baku Bridges 19 & 20 - Km 157 & 700 Bridges 10 & 11 - Km 111 & 200	0.01 0.00 0.00	0.01 0.01 0.01	0.02 0.01 0.01	0.02 0.02 0.02	0.04 0.03 0.04	0.35 0.30 0.33													
Bridge 31 - Km 234 & 600 Bridges 33 & 34 - Km 252 & 800 Bridges 41 & 42 - Km 360 & 200 Bridge No.5 - Km 72 & 300	0.00 0.01 0.00 0.00	0.00 0.03 0.00 0.00	0.00 0.04 0.00 0.00	0.00 0.06 0.00 0.00	0.00 0.06 0.00 0.02	0.00 0.06 0.00 0.04	0.00 0.06 0.00 0.05	0.00 0.06 0.00 0.07	0.00 0.06 0.00 0.09	0.00 0.12 0.01 0.18	0.04 1.03 0.07 1.18								
Quarry Equipt. Total Depreciation	0.01	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.63 3.93

Trans-Caucasian Railway

Annex 1 - Table 4

TRACECA Tacis

Forecast Requirements Rolling Stock: Azerbaijan

Optimistic Variant: In US\$ '000s

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Investments																			
Purchase of																			
Locomotives													24,000	28,000	48,000	56,000	56.000	56.000	268,000
Main Overhauls	2.700	2.300	2.500	2.900									-						10,400
Scrapping Costs	2	4	4	4	4	3	3						4	5	6	5	3		46
Purchase of Wagons			2.480										61.240					39.240	102.960
Total	2.702	2.304	4.984	2.904	4	3	3	0	0	0	0	0	85.244	28.005	48.006	56.005	56.003	95.240	381.406
Regular Maintenance																			
Locomotives	1.610	1.610	2.076	2.076	2.076	2.076	2.076	2.076	2.076	2.076	2.076	2.076	1.275	1.275	1.275	1.275	1.275	1.367	31.721
Wagons	5.832	3.272	4.523	4.523	3.700	3.700	3.700	3.700	3.700	3.700	3.700	3.700	4.588	4.588	4.555	4.555	4.555	5.619	76.210
Total	7.442	4.882	6.599	6.599	5.776	5.776	5.776	5.776	5.776	5.776	5.776	5.776	5.863	5.863	5.830	5.830	5.830	6.986	107.931
Depreciation		150																	
Locomotives	82	152	227	315	315	315	315	315	315	315	315	315	1.042	1.891	3.345	5.042	6.739	8.436	29.794
Wagons			75	75	75	75	75	75	75	75	75	75	1.931	1.931	1.931	1.931	1.931	3.120	13.526
Total	82	152	302	390	390	390	390	390	390	390	390	390	2.973	3.822	5.276	6.973	8.670	11.556	43.320
Workshops																			
Investments	604	4.500	4.500	4.500	4.500	0	0	0	0	0	0	0	0	0	0	0	0	0	18.604
Equipment	444	150	150	150	150	0	0	0	0	0	0	0	0	0	0	0	0	0	1.044
Total	1.048	4.650	4.650	4.650	4.650	0	0	0	0	0	0	0	0	0	0	0	0	0	19.648
Maintenance	105	570	1.035	1.500	1.965	1.965	1.965	1.965	1.965	1.965	1.965	1.965	1.965	1.965	1.965	1.965	1.965	1.965	30.716
of workshops		101																180	
Depreciation	56	161	266	371	476	476	476	476	476	476	476	476	476	476	476	476	476	476	7.527
for workshops																		· · · · · · · · · · · · · · · · · · ·	

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Trans-Caucasian Railway

Forecast Requirements Rolling Stock: Azerbaijan

Pessimistic Variant: In US\$ '000s

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Investments		_																	
Purchase of					•														
Locomotives									28,000				40,000						68.000
Main Overhauls	2.700	2.300																	5.000
Scrapping Costs	3	8	7	6	6	6	8	5	2										48
Purchase of Wagons	0																		0
Total	2.703	2.308	7	6	6	6	8	5	28.000	0	0	0	40.000	0	0	0	0	0	73.048
Regular Maintenance																			
Locomotives	2.810	1.610	1,306	1.306	1,306	1.306	1.306	1,152	1 152	1 152	1 152	1 152	1,169	1 169	1,169	1,169	1,169	1,169	23,723
Wagons	5.548	2.988	2,702	2,702	2.359	2.359	2,359	2.359	2 359	2 3 5 9	2 359	2,359	3.021	3.021	2.967	2.967	2,967	3,784	51,539
Total	8.358	4.598	4.008	4.008	3.665	3.665	3.665	3.511	3.511	3.511	3.511	3.511	4.190	4.190	4.136	4.136	4.136	4.953	75.262
Depreciation							_												
Locomotives	82	152	152	152	152	152	152	152	1,000	1 000	1,000	1.000	2 2 1 2	2 2 1 2	2,212	2,212	2.212	2,212	18,415
Wagons			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	82	152	152	152	152	152	152	152	1.000	1.000	1.000	1.000	2.212	2.212	2.212	2.212	2.212	2.212	18.415
Workshops										_									_
Investments	500	4 500	4 500	4 500	4 500	0	0	0		_		0	_			0	0	0	19 500
Equipment	444	4.000	4.000	4.500	4.500	0	0	0	0	0	0	0	0	0	0	0	0	0	1 044
Total	944	4 650	4 650	4 650	4 650	0	0	0	0	0	0	0	0	0	0	0	0	0	10 544
Total	044	4.000	4.000	4.000	4.000		0	0	0	0	0	0	0	0	0		0		13.544
Maintenance	94	559	1.024	1.489	1.954	1.954	1.954	1.954	1.954	1.954	1.954	1.954	1.954	1.954	1.954	1.954	1.954	1.954	30.529
of workshops																		_	
Depreciation for workshops	54	159	264	369	474	474	474	474	474	474	474	474	474	474	474	474	474	474	7.489

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Annex 1 - Table 4

TRACECA Tacis

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Trans- Caucasian Railway

Forecast Requirements - Signalling: Azerbaijan

Figures in \$US mill.

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
New Investments:																			
Complete Signal Interlocking Locations	0.0	0.0	0.0	11.2	3.2	3.2	5.6	8.8	3.6	4.0	5.6	3.2	3.2	5.6	3.2	3.2	5.6	3.2	72.4
Replacement of Manual Signal Boxes	0.0	0.0	0.0	5.6	5.6	4.0	4.4	3.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8
Signals	2.4	0.8	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	7.8
Electric Points Systems	2.4	1.2	0.8	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	8.6
Direct Current Circuits	0.8	0.4	0.8	1.6	0.8	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	8.8
Automatic Level Crossings	0.4	0.2	0.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	18.8
Cable Equipment	0.8	0.4	0.4	0.8	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	7.1
Equipment for Central Repair Workshops	0.2	0.1	0.1	0.4	0.4	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.8
Renewal of Rolling Stock for																		- 41 - 1	
Maintenance and Fault Clearing	0.2	0.1	0.1	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4
Total New Investments	7.2	3.2	2.8	22.0	12.6	10.5	13.0	14.9	10.2	6.5	8.1	5.7	5.7	8.1	5.7	5.7	8.1	5.7	155.4

TRACECA Tacis

Annex 1 - Table 5

Trans- Caucasian Railway

Annex 1 - Table 5

TRACECA Tacis

Forecast Requirements - Signalling: Azerbaijan

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Maintenance Requirements:																			
Complete Signal Interlocking Locations	0.0	0.0	0.0	2.8	0.8	0.8	1.4	2.2	0.9	1.0	1.4	0.8	0.8	1.4	0.8	0.8	1.4	0.8	18.1
Replacement of Manual Signal Boxes	0.0	0.0	0.0	1.4	1.4	1.0	1.1	0.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7
Signals	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.9
Electric Points Systems	0.6	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1
Direct Current Circuits	0.2	0.1	0.2	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2
Automatic Level Crossings	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.7
Cable Spare Parts	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.8
Equipment for Central Repair Workshops	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Renewal of Rolling Stock for																			
Maintenance and Fault Clearing	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Total Maintenance	1.8	0.8	0.7	5.5	3.2	2.6	3.2	3.7	2.5	1.6	2.0	1.4	1.4	2.0	1.4	1.4	2.0	1.4	38.9

Trans- Caucasian Railway

Annex 1 - Table 5

Forecast Requirements - Signalling: Azerbaijan

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Depreciation:																			
Complete Signal Interlocking Locations	0.0	0.0	0.0	0.7	1.0	1.2	1.5	2.1	2.4	2.6	3.0	3.2	3.4	3.8	4.0	4.2	4.6	4.8	42.8
Replacement of Manual Signal Boxes	0.0	0.0	0.0	0.4	0.7	1.0	1.3	1.5	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	22.8
Signals	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	8.1
Electric Points Systems	0.2	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	9.0
Direct Current Circuits	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	5.4
Automatic Level Crossings	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	10.8
Cable Equipment	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2.8
Equipment for Central Repair Workshops	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	2.4
Renewal of Rolling Stock for	1804.001																		
Maintenance and Fault Clearing	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2.9
Total Depreciation	0.7	0.9	1.0	2.5	3.3	4.0	4.9	5.9	6.5	6.9	7.4	7.8	8.2	8.6	9.0	9.3	9.8	10.2	107.0



FM_A16.XLS

Trans- Caucasian Railway

Forecast Requirements - <u>Telecommunications:</u> Azerbaijan

Figures in \$US mill.

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
New Investments:																			
Cable Equipment	2.0	1.0	1.0	1.6	1.6	1.6	1.2	1.2	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6
Transmitting Equipment	0.4	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Telecommunication Exchange Equipt	0.4	0.2	0.2	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6
Radio Transmitting Equipment	1.0	0.5	0.5	1.2	0.8	0.6	0.6	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9
Other Installations	0.4	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Equipment for Central Repair Workshops	0.4	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Renewal of Rolling Stock for		100	5.4		andr	2.2	202	272	12.2	2012	2000	272			-				
Maintenance and Fault Clearing	2.0	1.0	1.0	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
Total New Investments	6.6	3.3	3.3	4.5	4.1	3.7	3.2	2.8	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.1
Maintenance Requirements:																			
Cable Equipment	0.8	1.0	1.3	1.7	2.1	2.5	2.8	3.1	3.3	3.5	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	50.9
Transmitting Equipment	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	13.6
Telecommunication Exchange Equipt	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	12.6
Radio Transmitting Equipment	0.4	0.5	0.6	0.9	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	26.0
Other Installations	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	10.4
Equipment for Central Repair Workshops	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	8.2
Renewal of Rolling Stock for	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maintenance and Fault Clearing	0.4	0.6	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	18.7
Total Maintenance	2.1	2.9	3.8	4.9	5.9	6.8	7.6	8.3	8.9	9.4	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	140.3

Annex 1 - Table 6

Trans- Caucasian Railway

Annex 1 - Table 6

TRACECA Tacis

Forecast Requirements - Telecommunications: Azerbaijan

Description	1989	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Depreciation:																			
		-						-											
Cable Equipment	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	6.8
Transmitting Equipment	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.7
Telecommunication Exchange Equipt	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.5
Radio Transmitting Equipment	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	5.2
Other Installations	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	2.8
Equipment for Central Repair Workshops	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	2.0
Renewal of Rolling Stock for																			
Maintenance and Fault Clearing	0.6	0.8	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	20.4
Total Depreciation	1.0	1.3	1.6	1.9	2.1	2.3	2.5	2.7	2.8	2.8	2.9	2.8	2.8	2.7	2.6	2.6	2.6	2.5	42.3