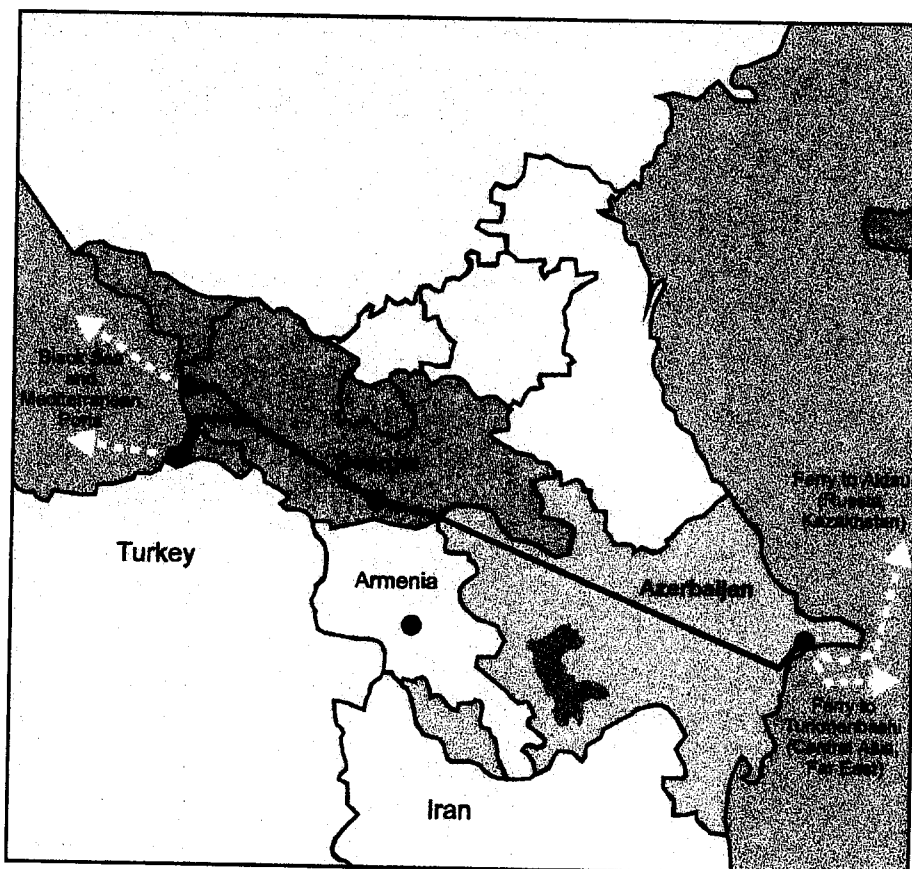


TRACECA

Infrastructure Maintenance 1

Railways

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



Final Report

**Financing Memorandum
Georgian Railways**

October 1997

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The Financing Memorandum
Georgian Railways

Foreword

This offering memorandum outlines the development plans consisting of investment and maintenance requirements drawn up for the Georgian Railways. The objective of the proposed development plan is to support and deepen the restructuring process which the Georgian Railways has initiated. In this context, the memorandum discusses an assessment of railway's financial performance with respect to current operations and planned restructuring actions. Projected cash flows and income statements drawn up for the Georgian Railways are an important part of the presentation.

Overall, this memorandum can be 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 Georgian Railways situation

The Government of Georgia 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 market-economy dominate the economic picture in the country. The railway sector is particularly affected by the emergence of this 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 Georgian 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 Georgian Railways is considering the introduction of important changes, foremost concerned are restructuring of organisational policy, operations management, and rehabilitation. In this context, priority attention shall be paid to the system's rehabilitation since track equipment has been run down, and there is not sufficient financing available. The Georgian 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 external financing. Particular financial assistance is needed for coverage of capital and operational expenses.

2 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, however, focuses solely on the requirements developed within the scope of the investment and maintenance plans for the Georgian Railways in line with the restructuring concept.

It contains projected investment, and maintenance 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 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 are obtained locally - within the region whenever possible rather than to import more expensive products externally.

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.

Table 1: Required investments for construction and equipment - Georgia

Year (millions of US \$)	1998-2000	2001-2005	2006-2010	2011-2015	Total
Bridges (2.9% of total financing)	9.1	3.0	-	-	12.1
Permanent way (37.3% of total financing)	54.0	98.8	-	-	152.8
Permanent way maintenance (7.6% of total financing)	16.8	13.7	-	-	30.5
Rolling stock (12.4% of total financing)	4.9	4.5	40.9	-	50.3
Workshops (8.7% of total financing)	17.1	10.8	8.0	-	35.9
Signalling (24.2% of total financing)	19.0	59.4	20.7	-	99.1
Telecommunications (6.9% of total financing)	7.4	14.3	6.6	-	28.3
Total	128.3	204.5	76.2	-	409.0

* The first three years represent priority years for investment requirements. Source: Study conducted by TEWET / Deutsche Eisenbahn-Consulting, 1997.

Bridges make up only 3% of total financing requirements over the entire investment period. In contrast, permanent way needs amount to 37% of total financial needs, which is not surprising due to capital intensity of these investments. Total investment is highest in the first two years, whereby it reaches a peak in 2001-2005 with about 204.5 mill. US Dollars. No investment is needed from 2011 until 2015. Overall, investment financing needs come up at the beginning of operations.

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 maintain these maintenance levels will result in large repairs and deterioration of the assets within the projected lifespan for their use.

Table 2: Maintenance requirements - Georgia

Year (millions of US\$)	1998-2000	2001-2005	2006-2010	2011-2015	Total
Bridges <i>(1.2% of total financing)</i>	0.9	3.1	3.1	3.1	10.2
Permanent way <i>(26% of total financing)</i>	10.8	56.3	76.5	76.5	220.1
Permanent way maintenance <i>(5.4% of total financing)</i>	3.1	12.2	15.3	15.0	45.6
Rolling stock <i>(11.5% of total financing)</i>	12.7	22.5	27.6	34.5	97.3
Workshops <i>(5.7% of total financing)</i>	3.0	12.0	15.5	18.0	48.5
Signalling <i>(38.8% of total financing)</i>	11.9	72.6	118.8	124.0	327.3
Telecommunications <i>(11.1% of total financing)</i>	4.6	20.7	33.7	35.3	94.3
Total % financing	47.0 (5.5%)	199.4 (23.6%)	290.5 (34.4%)	306.4 (36.3%)	843.3

Maintenance of signalling requires the chunk of financing needs over the entire period until 2015. Thereafter, permanent way and rolling stock capital needs are greatest. In the first three years, maintenance financing is quite low at about 5.5%, increasing constantly until 2015 with a peak of 36.3% in the last five years. This development is quite normal as the equipment acquired in the beginning years require continuous maintenance with increased usage.

3 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 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.

Table 3: Three - four years investment plan proposal

Year (millions of US\$)	1998	1999	2000	2001	Total
Bridges (9.4% of total)	3.04	3.04	3.04	3.04	12.16
<i>Bridge no 18. Km 2289 & 216</i>	1.25	1.25	1.25	1.25	
<i>Bridge no. 27- Km 2324 & 239</i>	0.50	0.50	0.50	0.50	
<i>Bridge no. 56 - Km 2429 & 790</i>	0.50	0.50	0.50	0.50	
<i>Bridge no. 65 - Km 2472 & 759</i>	0.50	0.50	0.50	0.50	
<i>Bridge no. 79 - Km 10 & 144</i>	0.25	0.25	0.25	0.25	
<i>Bridges No. 1,4,10,11,13</i>	0.04	0.04	0.04	0.04	
Permanent way (56% of total)	18.0	18.0	18.0	18.0	72.0
<i>Line: Tbilisi - Poti (1st Priority)</i>	15.7	15.7	15.7	15.7	
<i>Line: Tbilisi - Poti (Crossovers)</i>	2.0	2.0	2.0	2.0	
<i>Crossing timber sets</i>	0.4	0.4	0.4	0.4	
Permanent way (13% of total) maintenance	2.60	3.15	11.08		16.83
Rolling stock (3.8% of total)	2.104	2.104	0.704		4.912
<i>Major overhauls</i>	2.1	2.1	0.7		
<i>Scrapping costs</i>	0.04	0.04	0.04		
Workshops (13% of total)	3.75	5.88	7.5		17.12
<i>Investment</i>	0.5	0.5	2.5		
<i>Equipment</i>	3.25	5.38	5.0		
Signalling (2.1% of total)	0.7	0.7	0.7	0.7	2.8
<i>Cable equipment</i>	0.6	0.6	0.6	0.6	
<i>Equipment for central repair</i>	0.1	0.1	0.1	0.1	
Telecomm. (1.8% of total)	0.6	0.6	0.6	0.6	2.4
<i>Cable equipment</i>	0.4	0.4	0.4	0.4	
<i>Equipment for central repair</i>	0.2	0.2	0.2	0.2	
Total Bank Financing (% of financing)	30.79 24 %	33.47 26.25%	41.62 32.25%	22.34 17.5%	128.22

Bridges itemised in Table 3 are in poor condition and substantial portions of them require renewal or urgent maintenance. These include bridges numbered 18, 27, 56, 65, 79, 10 & 144, 1, 4, 10, 11. Immediate modernisation of these bridges require about US\$ 12.16 million up to the year 2001. This makes up about 9.4% of the total financing required.

Recommended actions to develop the permanent way ask for 56% of total investment requirements with a total outlay of US\$ 72 million up to the year 2001. Investments are needed to cover the line connection between Tbilisi and Poti which will receive priority attention. Change over points and crossing timer sets are included in the immediate investment requirements.

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

- a) miscellaneous machinery and equipment,
- b) track vehicle,
- c) loader excavator,
- d) diesel motors as well as
- e) quarry equipment and
- f) training.

Permanent way maintenance need estimates cover 16.83% of total investment costs. Rolling stock investment needs over the next ten years are about US\$ 4.9 million up to the year 2000, and make up about 3.8% of total urgent investment costs. This includes major overhauls and scrapping costs.

The priorities in the signalling shall include investments in cable equipment, and equipment for central repair. Therefore, US\$ 2.8 million is required within the next four years. With regard to telecommunications all measures outlined in Annex 2 are considered important and need to paid attention to. Therefore, additional US\$ 2.4 million will be required up to the year 2001. This implies about 2.4% 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 24% of the financing requirements would be needed for allocation in 1998, and additional 26% in 1999, 32% in 2000, and about 17% in 2001.

4 Multi-annual development plan appraisal

The proposed development plan 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 desegregated by 6 categories;
- net income before depreciation derived from:
 - ⇒ revenues from passenger and freight traffic,
 - ⇒ costs such as the proposed maintenance costs, personnel costs (passenger and freight), cost of energy, other costs,
 - ⇒ 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 more 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 reduced and tested for their effects:

- Quantity transported in total (kilotons):
 - ⇒ Year 2000: 46% reduction,
 - ⇒ Year 2010: 49% reduction,
 - ⇒ Year 2015: 52% reduction,
- Passenger and goods transport performance (Mill. tons kilometre):
 - ⇒ Year 2000: 94% reduction,
 - ⇒ Year 2010: 74% reduction,
 - ⇒ Year 2015: 77% reduction,
- Goods transport (goods exported, and domestic transport, kilo tons):
 - ⇒ Year 2000: 81% reduction,
 - ⇒ Year 2010: 75% reduction,
 - ⇒ Year 2015: 76% reduction.

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. This is understood as the feasibility of operating the system under the assumption of investments only in signalling, telecommunications, rolling stock and the 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, and can support the financial investments proposed. Once again, in this case various optimistic and pessimistic cases are tested for effects of changes on net income.

4.1 Cash flow forecast (1998 - 2015)

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

4.1.1 Cash flow with infrastructure investment

The base case cash flow outlook provides a negative IRR. Thus, the project is not financially viable even based on the 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.

Table 4: Cash Flow Statement, Trans- Caucasian Railway

Financial Plan GRZD: 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	18.06	3.04	2.60	2.10	3.75	4.80	1.90	36.26	5.05	-31.21
1999	18.06	3.04	3.15	2.10	5.88	4.80	1.90	38.94	7.26	-62.88
2000	18.06	3.04	11.08	0.70	7.50	4.80	1.90	47.08	9.48	-100.48
2001	18.06	3.04	2.87		2.50	4.80	1.90	33.17	11.22	-122.43
2002	20.18		0.91		2.28	19.60	3.60	46.57	12.97	-156.04
2003	20.18		0.91		2.00	10.20	3.20	36.49	14.71	-177.82
2004	20.18		0.55		2.00	8.50	2.60	33.83	16.45	-195.20
2005	20.18		8.48	4.50	2.00	9.80	2.50	47.46	18.19	-224.47
2006					2.00	11.40	2.40	15.80	19.93	-220.33
2007						7.00	2.20	9.20	21.68	-207.86
2008						6.90	2.20	9.10	23.42	-193.54
2009						6.90	2.20	9.10	25.16	-177.48
2010				40.90	6.00			46.90	26.90	-197.48
2011								0.00	30.63	-166.85
2012								0.00	34.35	-132.50
2013								0.00	38.08	-94.42
2014								0.00	41.80	-52.62
2015								0.00	45.53	-7.09
Total	152.96	12.16	30.55	50.31	35.91	99.50	28.50	409.89		
Res. Value	64.96	8.15	1.61	38.80	7.81	20.80	8.20			150.33
						Internal Rate of Return				0

Similarly, the pessimistic cash flow analysis presented in Table 5 shows 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 always negative. This is the case even though financing of operations and investments were not integrated and must not be made. This implies non-viability of the project unless there is more funding available to cover the cash outflows.

Table 5: Cash Flow Statement, Trans-Caucasian Railway

Financial Plan GRZD: Pessimistic Variant

Figures in USD/millions

Year	Permanent Way	Bridges	Equipment	Rolling Stock	Workshops Equipment	Signalling	Telecomms	Total Investments	Net Income before Depr.	Incremental Cash flow
1998	18.06	3.04	2.60		3.37	4.80	1.90	33.77	0.02	-33.75
1999	18.06	3.04	3.15		5.50	4.80	1.90	36.45	0.11	-70.09
2000	18.06	3.04	11.08		7.50	4.80	1.90	46.38	0.20	-116.27
2001	18.06	3.04	2.87		2.50	4.80	1.90	33.17	0.23	-149.21
2002	20.18		0.91		2.28	19.60	3.60	46.57	0.27	-195.51
2003	20.18		0.91		2.00	10.20	3.20	36.49	0.31	-231.69
2004	20.18		0.55		2.00	8.50	2.60	33.83	0.34	-265.18
2005	20.18		8.48	0.70	2.00	9.80	2.50	43.66	0.38	-308.46
2006					2.00	11.40	2.40	15.80	0.41	-323.85
2007						7.00	2.20	9.20	0.45	-332.60
2008						6.90	2.20	9.10	0.48	-341.22
2009						6.90	2.20	9.10	0.52	-349.80
2010				3.90	6.00			9.90	0.56	-359.14
2011								0.00	0.69	-368.45
2012								0.00	0.83	-357.61
2013								0.00	0.97	-356.64
2014								0.00	1.11	-355.53
2015				1.50				1.50	1.25	-355.78
Total	152.96	12.16	30.55	6.10	35.15	99.50	28.50	364.92		
Res. Value	64.96	8.15	1.61	5.13	8.39	20.80	8.20			117.24
								Internal Rate of Return		0

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 under 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 the IRR is 61% under the optimistic variant, the project would be desirable and sustainable. However, as priority there are no financial requirements (interest and principal payments for loans to be repaid).

Table 6: Cash Flow Statement, Trans- Caucasian Railway

Financial Plan GRZD: Optimistic Variant (Without Infrastructure)

Figures in USD'millions

Year	Rolling Stock	Workshop Equipment	Signalling	Telecomm	Total Investments	Net Income before Depr.	Incremental Cash Flow	
1998	2.10	3.75	4.80	1.90	12.56	10.00	-2.56	
1999	2.10	5.88	4.80	1.90	14.69	12.21	-5.03	
2000	0.70	7.50	4.80	1.90	14.90	14.43	-5.50	
2001		2.50	4.80	1.90	9.20	17.34	2.64	
2002		2.28	19.60	3.60	25.48	20.25	-2.59	
2003		2.00	10.20	3.20	15.40	23.16	5.17	
2004		2.00	8.50	2.60	13.10	26.07	18.14	
2005	4.50	2.00	9.80	2.50	18.80	28.98	28.33	
2006		2.00	11.40	2.40	15.80	31.89	44.42	
2007			7.00	2.20	9.20	34.80	70.02	
2008			6.90	2.20	9.10	37.71	98.64	
2009			6.90	2.20	9.10	40.62	130.16	
2010	40.90	6.00			46.90	43.53	126.80	
2011					0.00	47.71	174.51	
2012					0.00	51.90	226.41	
2013					0.00	56.08	282.48	
2014					0.00	60.26	342.74	
2015					0.00	64.44	407.17	
Total	50.31	35.91	99.50	28.50	214.22			
Res. Value	38.80	7.81	20.80	8.20			75.61	
Internal Rate of Return							61.11%	

Again under the pessimistic variant Georgian Railways would not obtain a positive IRR and a negative cash flow within ten years. The overall conclusion is that the project without infrastructure in the pessimistic case would not be in a position to cover financing costs.

Table 7: Cash Flow Statement, Trans- Caucasian Railway

Financial Plan GRZD: Pessimistic Variant (Without Infrastructure)

Figures in USD'millions

Year	Rolling Stock	Workshops Equipment	Signalling	Telecomm.	Total Investments	Net Income before Depr.	Incremental Cash Flow
1998		3.37	4.80	1.90	10.07	4.97	-5.10
1999		5.50	4.80	1.90	12.20	5.06	-12.24
2000		7.50	4.80	1.90	14.20	5.15	-21.29
2001		2.50	4.80	1.90	9.20	6.35	-24.14
2002		2.28	19.60	3.60	25.48	7.56	-42.06
2003		2.00	10.20	3.20	15.40	8.76	-48.70
2004		2.00	8.50	2.60	13.10	9.96	-51.84
2005	0.70	2.00	9.80	2.50	15.00	11.17	-55.67
2006		2.00	11.40	2.40	15.80	12.37	-59.10
2007			7.00	2.20	9.20	13.58	-54.72
2008			6.90	2.20	9.10	14.78	-49.04
2009			6.90	2.20	9.10	15.98	-42.16
2010	3.90	6.00			9.90	17.19	-34.87
2011					0.00	17.78	-17.09
2012					0.00	18.38	1.29
2013					0.00	18.97	20.26
2014					0.00	19.56	39.82
2015	1.50				1.50	20.16	58.48
Total	6.10	35.15	99.50	28.50	169.25		
Res. Value	5.13	8.39	20.80	8.20			42.52
Internal Rate of Return							0

4.2 Income-statement forecast

This section presents a summary of the Georgian Railway 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 (Lari to US Dollar) remains unchanged throughout all the years at a conversion rate of US\$ 1 corresponding to 1.2 Lari.
2. Normalised costs based on 1995 prices are used for the assessment of costs. An inflation index of 2.5 per cent is applied to all years afterwards. Costs are normalised as such:

- ⇒ staff costs are increased due to higher maintenance requirements,
 - ⇒ cost of repairs are increased by the share of unpaid services rendered by others (e.g. for unpaid repairs of engines in Belarus and the Ukraine),
 - ⇒ cost of material are increased due to higher need for spare parts maintenance (own services),
 - ⇒ amortisation is valued higher due to normalisation of the depreciation cost of the fixed assets, which could not sufficiently be provided.
3. Interest payments on loans to be granted to the railways are not entered as costs into the income statement since conditions (e.g. amount of the loan, repayment periods, interest rates, etc.) are not known.
4. The amount of state taxes is about 20 per cent and remains unchanged throughout the period of investigation up until the year 2015.

The income statement for the optimistic version shows -4.37 Million US Dollar for net profit after taxes in year 2000. Thus, no profits will be available to cover the financing charges for proposed investments. This financial calamity can only be overcome by granting a long-term loan. The repayment should be coupled with conditions to improve the business results and should not start before a repayment-free period of ten years, as only after this time, there will be sufficient means for annual instalments for refinancing from the net profit of the railways.

Table 8: Income statement, Georgian Railways, optimistic case

Item	Year			
	1997	2000	2010	2015
Development of Transportation Output				
No. of passengers (millions)	3.2	3.6	5.7	6.9
Passenger-kms (millions)	348	412	716	897
Average travel distance (km)	108.875	114.555556	125.54386	130
Tonnes originating (1000 t)	4,886	9,525	15,268	17,469
Net tonne-kms (milions)	1,319	3,238	5,191	5,940
Average lead (km)	270	340	340	340
Revenue from Passenger and Freight Transport				
Revenue from passenger transport (1000 US\$)	871.0	2062.0	35780.0	89,730.0
Revenue from freight transport (1000 US\$)	46,165.0	129,520.0	259,550.0	326,700.0
Total revenue (1000 US\$)	47,036.0	131,582.0	295,330.0	416,430.0
Unit revenue in passenger transport (US\$/passkm)	0.0025	0.0050	0.0500	0.1000
Unit revenue in freight transport (US\$/tkm)	0.0350	0.0400	0.0500	0.0550
Prime Costs of Transport				
Prime costs of freight transport (1000 US\$)	29,828.4	98,413.6	212,918.3	289,640.7
Prime costs of passenger transport (1000 US\$)	10,480.2	17,367.1	37,573.8	51,113.1
Total prime costs (1000 US\$)	40,308.6	115,780.7	250,492.1	340,753.7
Proportional coefficient prime costs freight transport of total costs	0.74	0.85	0.85	0.85
Proportional coefficient prime costs passenger transport of total costs	0.26	0.15	0.15	0.15
Unit cost freight transport (US\$/tkm)	0.0226	0.0304	0.0410	0.0488
Unit cost passenger transport (US\$/passkm)	0.0301	0.0421	0.0525	0.0570
Difference unit revenue vs. unit cost passenger transport	-0.0276	-0.0371	-0.0025	0.0430
Difference unit revenue vs. unit cost freight transport	0.0124	0.0096	0.0090	0.0062
Selected Cost Components				
Personnel costs (1000 US\$)	8,300.0	35,000.0	100,000.0	150,000.0
Percentage of total costs (%)	20.6	30.2	39.9	44.0
of which personnel costs for freight transport (1000 US\$)	6,142.0	29,750.0	85,000.0	127,500.0
of which personnel costs for passenger transport (1000 US\$)	2,158.0	5,250.0	15,000.0	22,500.0
costs for traction energy (1000 US\$)	5,411.7	9,682.0	17,282.3	21,041.4
Percentage of total costs (%)	13.4	8.4	6.9	6.2
of which costs for freight transport (1000 US\$)	4,004.6	8,229.7	14,689.9	17,885.2
of which costs for passenger transport (1000 US\$)	1,407.0	1,452.3	2,592.3	3,156.2
of which fuel (1000 US\$)	1,813.1	3,243.7	5,790.1	7,049.5
of which electric power (1000 US\$)	3,598.6	6,438.2	11,492.2	13,991.9
Repair costs (1000 US\$)	11,800.0	32,000.0	62,000.0	75,000.0
Percentage of total costs (%)	29.3	27.6	24.8	22.0
of which costs for freight transport (1000 US\$)	8,732.0	27,200.0	52,700.0	63,750.0
of which costs for passenger transport (1000 US\$)	3,068.0	4,800.0	9,300.0	11,250.0

Item	1997	2000	2010	2015
costs for other energy usage (1000 US\$)	1,706.4	2,766.8	4,715.0	5,753.1
Percentage of total costs (%)	4.2	2.4	1.9	1.7
of which fuel (1000 US\$)	610.6	990.0	1,687.1	2,058.5
of which electric power (1000 US\$)	1,095.9	1,776.8	3,027.9	3,694.6
Other costs (1000 US\$)	13,090.5	36,331.9	66,494.8	88,959.3
Percentage of total costs (%)	32.5	31.4	26.5	26.1
of which costs for material (1000 US\$)	4,050.0	13,433.0	28,300.0	38,000.0
Percentage of total costs (%)	10.0	11.6	11.3	11.2
of which amortisation (1000 US\$)	6,500.0	20,177.0	34,868.0	47,330.0
Percentage of total costs (%)	16.1	17.4	13.9	13.9
of which other costs (1000 US\$)	2,540.5	2,721.9	3,326.8	3,629.3
Percentage of total costs (%)	6.3	2.4	1.3	1.1
Sum prime costs (1000 US\$)	40,308.6	115,780.7	250,492.1	340,753.7
Cost Coverage				
Cost coverage passenger transport (1000 US\$)	-9,609.2	-15,305.1	-1,793.8	38,616.9
Cost coverage freight transport (1000 US\$)	16,336.6	31,106.4	46,631.7	37,059.3
Cost coverage total transport (1000 US\$)	6,727.4	15,801.3	44,837.9	75,676.3
Profit Calculation				
Net profit before tax requ. depreciation, interest and tax (1000 US\$)	6,727.4	15,801.3	44,837.9	75,676.3
Tax required depreciation (1000 US\$)	6,500.0	20,177.0	34,868.0	47,330.0
Net profit before interest and tax (1000 US\$)	227.4	-4,375.7	9,969.9	28,346.3
Interest for (additional) loans (1000 US\$)				
Net profit before tax (1000 US\$)	227.4	-4,375.7	9,969.9	28,346.3
Taxes (1000 US\$)	45.5	0.0	1,994.0	5,669.3
Net profit after tax (1000 US\$)	181.9	-4,375.7	7,975.9	22,677.0
Financial Resources				
Own resources				
net profit after tax (1000 US\$)	181.9	-4,375.7	7,975.9	22,677.0
tax required depreciation (1000 US\$)	6,500.0	20,177.0	34,868.0	47,330.0

In the pessimistic case the financial situation is indicated through negative profits after tax through all years. 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 financial situation may only be overcome by granting a long-term loan. Repayment shall include a grace period of five years when there will be sufficient means for annual instalments for refinancing from net profit of the railways.

Table 9: Income statement, Georgian Railways, pessimistic case

Item	1997	2000	2010	2015
Development of Transportation Output				
No. of passengers (millions)	3.1	2.9	4.26	4.8
Passenger-kms (millions)	338	321	550	620
Average travel distance (km)	108.935484	110.517241	129.131455	129
Tonnes originating (1000 t)	4,390	4,477	7,611	9,135
Net tonne-kms (millions)	1,185	1,522	2,588	3,106
Average lead (km)	270	340	340	340
Revenue from Passenger and Freight Transport				
Revenue from passenger transport (1000 US\$)	675.4	1602.5	16503.0	31,010.0
Revenue from freight transport (1000 US\$)	37,920.0	53,270.0	103,520.0	139,770.0
Total revenue (1000 US\$)	38,595.4	54,872.5	120,023.0	170,780.0
Unit revenue in passenger transport (US\$/passkm)	0.0020	0.0050	0.0300	0.0500
Unit revenue in freight transport (US\$/tkm)	0.0320	0.0350	0.0400	0.0450
Prime Costs of Transport				
Prime costs of freight transport (1000 US\$)	27,383.6	46,360.9	101,231.3	146,768.1
Prime costs of passenger transport (1000 US\$)	11,184.8	8,181.3	17,864.3	21,930.9
Total prime costs (1000 US\$)	38,568.4	54,542.3	119,095.6	168,699.0
Proportional coefficient prime costs freight transport of total costs	0.71	0.85	0.85	0.87
Proportional coefficient prime costs passenger transport of total costs	0.29	0.15	0.15	0.13
Unit cost freight transport (US\$/tkm)	0.0231	0.0305	0.0391	0.0473
Unit cost passenger transport (US\$/passkm)	0.0331	0.0255	0.0325	0.0354
Difference unit revenue vs. unit cost passenger transport	-0.0311	-0.0205	-0.0025	0.0146
Difference unit revenue vs. unit cost freight transport	0.0089	0.0045	0.0009	-0.0023
Selected Cost Components				
Personnel costs (1000 US\$)	8,300.0	13,000.0	40,000.0	65,000.0
Percentage of total costs (%)	21.5	23.8	33.6	38.5
of which personnel costs for freight transport (1000 US\$)	5,893.0	11,050.0	34,000.0	56,550.0
of which personnel costs for passenger transport (1000 US\$)	2,407.0	1,950.0	6,000.0	8,450.0
costs for traction energy (1000 US\$)	4,977.7	6,071.7	10,295.8	12,726.9
Percentage of total costs (%)	12.9	11.1	8.6	7.5
of which costs for freight transport (1000 US\$)	3,534.2	5,161.0	8,751.4	11,072.4
of which costs for passenger transport (1000 US\$)	1,443.5	910.8	1,544.4	1,654.5
of which fuel (1000 US\$)	1,667.7	2,034.2	3,449.4	4,263.9
of which electric power (1000 US\$)	3,310.0	4,037.5	6,846.4	8,463.0
Repair costs (1000 US\$)	11,650.9	15,015.4	30,925.7	39,150.9
Percentage of total costs (%)	30.2	27.5	26.0	23.2
of which costs for freight transport (1000 US\$)	8,272.2	12,763.1	26,286.8	34,061.3
of which costs for passenger transport (1000 US\$)	3,378.8	2,252.3	4,638.8	5,089.6
costs for other energy usage (1000 US\$)	1,644.1	1,962.4	3,039.1	3,648.5
Percentage of total costs (%)	4.3	3.6	2.6	2.2
of which fuel (1000 US\$)	599.1	702.2	1,087.4	1,305.5
of which electric power (1000 US\$)	1,045.0	1,260.2	1,951.7	2,343.0

Item	1997	2000	2010	2015
	Other costs (1000 US\$)	11,995.7	18,492.8	34,835.1
Percentage of total costs (%)	31.1	33.9	29.2	28.6
of which costs for material (1000 US\$)	3,629.7	6,303.2	14,116.1	19,836.5
Percentage of total costs (%)	9.4	11.6	11.9	11.8
of which amortisation (1000 US\$)	5,825.5	9,467.7	17,392.2	24,706.9
Percentage of total costs (%)	15.1	17.4	14.6	14.6
of which other costs (1000 US\$)	2,540.5	2,721.9	3,326.8	3,629.3
Percentage of total costs (%)	6.6	5.0	2.8	2.2
Sum prime costs (1000 US\$)	38,568.4	54,542.3	119,095.6	168,699.0
Cost Coverage				
Cost coverage passenger transport (1000 US\$)	-10,509.4	-6,578.8	-1,361.3	9,079.1
Cost coverage freight transport (1000 US\$)	10,536.4	6,909.1	2,288.7	-6,998.1
Cost coverage total transport (1000 US\$)	27.0	330.2	927.4	2,081.0
Profit Calculation				
Net profit before tax requ. depreciation, interest and tax (1000 US\$)	27.0	330.2	927.4	2,081.0
Tax required depreciation (1000 US\$)	5,825.5	9,467.7	17,392.2	24,706.9
Net profit before interest and tax (1000 US\$)	-5,798.5	-9,137.5	-16,464.8	-22,625.8
Interest for (additional) loans (1000 US\$)				
Net profit before tax (1000 US\$)	-5,798.5	-9,137.5	-16,464.8	-22,625.8
Taxes (1000 US\$)	0.0	0.0	0.0	0.0
Net profit after tax (1000 US\$)	-5,798.5	-9,137.5	-16,464.8	-22,625.8
Financial Resources				
Own resources				
net profit after tax (1000 US\$)	-5,798.5	-9,137.5	-16,464.8	-22,625.8
tax required depreciation (1000 US\$)	5,825.5	9,467.7	17,392.2	24,706.9
Sum of own resources (1000 US\$)	27.0	330.2	927.4	2,081.0

Forecast Requirements - Permanent Way: Georgia

Annex 1 - Table 1

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:																					
Line: Tbilisi - Poti: 1st Priority	15.7	15.7	15.7	15.7	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	62.6	
Line: Tbilisi - Poti: 2nd Priority	0.0	0.0	0.0	0.0	18.2	18.2	18.2	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.7	
Line: Tbilisi - Poti: Crossovers	2.0	2.0	2.0	2.0	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	16.0	
Cross 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	0.0	1.5	
Total New Investments	18.0	18.0	18.0	18.0	20.2	20.2	20.2	20.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	152.9	
Maintenance Requirements:																					
Line: Tbilisi - Poti: 1st Priority	1.6	3.1	4.7	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	12.5	
Line: Tbilisi - Poti: 2nd Priority	0.0	0.0	0.0	0.0	1.8	3.6	5.5	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	14.5	
Line: Tbilisi - Poti: Crossovers	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	3.2	
Cross Timber Sets	0.0	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	0.2	0.2	0.2	0.2	0.2	0.3	
Total maintenance	1.8	3.6	5.4	7.2	9.2	11.3	13.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	30.6	
Depreciation:																					
Line: Tbilisi - Poti: 1st Priority	0.6	1.3	1.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	
Line: Tbilisi - Poti: 2nd Priority	0.0	0.0	0.0	0.0	0.7	1.5	2.2	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	5.8	
Line: Tbilisi - Poti: Crossovers	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3	
Cross 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	0.1	0.1	
Total Depreciation	0.7	1.4	2.2	2.9	3.7	4.5	5.3	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	12.2	
Total																					94.1

Forecast Requirements - Permanent Way Maintenance Equipmt.: Georgia

Annex 1 - Table 2

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:																				
Misc. Machinery & Equipmt.	1.25	1.25	1.25	1.25	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	0.00	5.00
Bridge Inspection Vehicle	0.00	0.00	0.00	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	1.17
Track Vehicle	0.57	0.57	0.57	0.00	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	0.00	2.85
Loader Excavator	0.34	0.34	0.34	0.00	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	0.00	1.68
Ballast Cleaning Machine	0.00	0.00	4.38	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	0.00	8.76
Unimat	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	0.00	5.72
Ballast Regulating Machine	0.00	0.00	1.24	0.00	0.00	0.00	0.00	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.48
Hydraulic Rail Treater	0.00	0.55	0.00	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	0.00	1.10
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	0.00	0.08
Quarry Equipmt.	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	0.00	1.00
Sleeper Impregnation Plant	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	0.00	0.20
Training	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	0.00	0.50
Total New Investments	2.60	3.15	11.08	2.87	0.91	0.91	0.55	8.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.54

Forecast Requirements - Permanent Way Maintenance Equipmt.: Georgia

Annex 1 - Table 2

Figures in \$US mill.

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Maintenance Requirements:																			
Misc. Machinery & Equipmt.	0.13	0.25	0.38	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	8.75
Bridge Inspection Vehicle	0.00	0.00	0.00	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	1.87
Track Vehicle	0.06	0.11	0.17	0.17	0.23	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	4.73
Loader Excavator	0.03	0.07	0.10	0.10	0.13	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	2.78
Ballast Cleaning Machine	0.00	0.00	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	12.70
Unimat	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 Regulating Machine	0.00	0.00	0.12	0.12	0.12	0.12	0.12	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	3.60
Hydraulic Rail Treater	0.00	0.06	0.06	0.06	0.06	0.06	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1.71
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	0.01	0.14
Quarry Equipmt.	0.03	0.05	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	0.10	0.10	0.10	1.75
Sleeper Impregnation Plant	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.35
Spares: Ballast Cleaning Machine	0.11	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Spares: Unimat	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Spares: Ballast Regulating Machine	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Spares: 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
Total Maintenance	0.48	0.78	1.88	2.15	2.21	2.28	2.33	3.18	3.18	3.09	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	48.59

Forecast Requirements - Permanent Way Maintenance Equipmt.: Georgia

Annex 1 - Table 2

Figures in \$US mill.

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	
Depreciation:																				
Misc. Machinery & Equipmt.	0.13	0.25	0.38	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.38	0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.00	5.00
Bridge Inspection Vehicle	0.00	0.00	0.00	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.00	0.00	0.00	1.17
Track Vehicle	0.06	0.11	0.17	0.17	0.23	0.29	0.29	0.29	0.29	0.29	0.23	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	2.62
Loader Excavator	0.03	0.07	0.10	0.10	0.13	0.17	0.17	0.17	0.17	0.17	0.13	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.54
Ballast Cleaning Machine	0.00	0.00	0.44	0.44	0.44	0.44	0.44	0.88	0.88	0.88	0.88	0.88	0.44	0.44	0.44	0.44	0.44	0.44	0.00	8.76
Unimat	0.00	0.00	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.29	0.29	0.29	0.29	0.29	0.29	0.00	5.72
Ballast Regulating Machine	0.00	0.00	0.12	0.12	0.12	0.12	0.12	0.25	0.25	0.25	0.25	0.25	0.12	0.12	0.12	0.12	0.12	0.12	0.00	2.48
Hydraulic Rail Treater	0.00	0.06	0.06	0.06	0.06	0.06	0.11	0.11	0.11	0.11	0.11	0.06	0.06	0.06	0.06	0.06	0.06	0.00	0.00	1.10
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Quarry Equipmt.	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	0.01	0.01	0.14
Sleeper Impregnation Plant	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.35
Total Depreciation	0.22	0.50	1.58	1.83	1.92	2.01	2.06	2.91	2.91	2.91	2.70	2.21	1.36	1.06	0.93	0.93	0.88	0.88	0.06	28.97

Forecast Requirements - Bridges: Georgia

Annex 1 - Table 3

Figures in \$US '000

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.18 - km 2289 & 216	1.25	1.25	1.25	1.25	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	0.00	5.00	
Bridge No. 27 - Km 2324 & 239	0.50	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	
Bridge No. 56 - Km 2494 & 790	0.50	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	
Bridge No. 65 - Km 2472 & 759	0.50	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	
Bridge No. 79 - Km 10 & 144	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	0.00	1.00	
Bridges Nos. 1, 4, 10, 11 & 13	0.04	0.04	0.04	0.04	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	0.14	
Total New Investments	3.04	3.04	3.04	3.04	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	12.14	
Maintenance Requirements:																					
Bridge No.18 - km 2289 & 216	0.06	0.13	0.19	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	4.38
Bridge No. 27 - Km 2324 & 239	0.03	0.05	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	0.10	0.10	0.10	0.10	0.20	1.75
Bridge No. 56 - Km 2494 & 790	0.03	0.05	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	0.10	0.10	0.10	0.10	0.20	1.75
Bridge No. 65 - Km 2472 & 759	0.03	0.05	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	0.10	0.10	0.10	0.10	0.20	1.75
Bridge No. 79 - Km 10 & 144	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	0.05	0.05	0.10	0.88
Bridges Nos. 1, 4, 10, 11 & 13	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	0.01	0.01	0.01	0.12
Total Maintenance	0.15	0.30	0.46	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	1.21	10.62

Forecast Requirements - Bridges: Georgia

Annex 1 - Table 3

Figures in \$US '000

Description	1998	1999	2000	2001	2002	2003	2003	2004	2005	2006	2007	2008	2009	2010	2010	2011	2012	2013	2014	2015	Total		
Depreciation:																							
Bridge No.18 - km 2289 & 216	0.03	0.05	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	0.10	0.10	0.10	0.10	0.10	0.10	0.20	1.75
Bridge No. 27 - Km 2324 & 239	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	0.04	0.04	0.04	0.04	0.08	0.70
Bridge No. 56 - Km 2494 & 790	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	0.04	0.04	0.04	0.04	0.08	0.70
Bridge No. 65 - Km 2472 & 759	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	0.04	0.04	0.04	0.04	0.08	0.70
Bridge No. 79 - Km 10 & 144	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.35
Bridges Nos. 1, 4, 10, 11 & 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05
Total Depreciation	0.06	0.12	0.18	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.49	4.25

Forecast Requirements Rolling Stock: Georgia

Annex 1 - Table 4

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	2,100	2,100	700					4,500					40,000						40,000
Main Overhauls	4	4	4	4	3	3							900						10,300
Scrapping Costs	4	4	4	4	3	3													21
Total	2,104	2,104	704	4	3	3	0	4,500	0	0	0	0	900	0	0	0	0	0	10,321
Regular Maintenance																			
Locomotives	1,000	1,000	2,600	2,600	2,600	2,600	2,600	3,425	3,425	3,425	3,425	3,425	4,325	4,325	4,325	4,325	4,325	4,325	58,225
Wagons	4,812	1,332	1,965	1,965	1,681	1,681	1,681	1,681	1,681	1,681	1,681	1,681	2,772	2,772	2,269	2,269	2,269	2,269	39,059
Total	5,812	2,332	4,565	4,565	4,281	4,281	4,281	5,106	5,106	5,106	5,106	5,106	7,097	7,097	6,594	6,594	6,594	6,594	97,284
Depreciation																			
Locomotives	64	64	21	0	0	0	0	136	0	0	0	0	27	0	0	0	0	0	313
Workshops																			
Investments	500	500	2,500	2,500	2,280	2,000	2,000	2,000	2,000	0	0	0	6,000	0	0	0	0	0	22,280
Equipment	3,251	5,381	5,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13,632
Total	3,751	5,881	7,500	2,500	2,280	2,000	2,000	2,000	2,000	0	0	0	6,000	0	0	0	0	0	35,912
Maintenance of workshops																			
Depreciation for workshops	375	588	750	250	228	200	200	200	200	0	0	0	600	0	0	0	0	0	3,591
Total	335	883	1,433	1,483	1,529	1,569	1,609	1,649	1,689	1,689	1,689	1,689	1,809	1,809	1,809	1,809	1,809	1,809	28,098

Annex 1 - Table 4

Forecast Requirements Rolling Stock: Georgia

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																				
Main Overhauls								700					3,900					1,500		6,100
Scrapping Costs	4	4	4	4	3	3	3	1	1	1	1	1	3							30
Total	4	4	4	4	3	3	0	701	1	1	1	1	3,903	0	0	0	0	1,500		6,130
Regular Maintenance																				
Locomotives	1,381	1,381	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	1,169	22,066
Wagons	4,742	1,262	1,530	1,530	1,412	1,412	1,412	1,412	1,412	1,412	1,412	1,412	2,049	2,049	1,764	1,764	1,764	2,500		32,250
Total	6,123	2,643	2,836	2,836	2,718	2,718	2,718	2,564	2,564	2,564	2,564	2,564	3,218	3,218	2,933	2,933	2,933	3,669		54,316

Workshops																				
Investments	500	500	2,500	2,500	2,280	2,000	2,000	2,000	2,000	0	0	0	6,000	0	0	0	0	0	0	22,280
Equipment	2,870	5,000	5,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,870
Total	3,370	5,500	7,500	2,500	2,280	2,000	2,000	2,000	2,000	0	0	0	6,000	0	0	0	0	0	0	35,150
Maintenance of workshops																				
Depreciation for workshops	337	887	1,637	1,887	2,115	2,315	2,515	2,715	2,915	2,915	2,915	2,915	3,515	3,515	3,515	3,515	3,515	3,515	3,515	47,158
Total	297	807	1,357	1,407	1,453	1,493	1,533	1,573	1,613	1,613	1,613	1,613	1,733	1,733	1,733	1,733	1,733	1,733	1,733	26,764

Forecast Requirements - Signalling: Georgia

Annex 1 - Table 5

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	4.0	4.0	6.4	8.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.6
Installations Samtredia - Poti - Batumi 2	0.8	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	0.0	1.6
Signals	2.0	1.0	1.0	2.0	0.8	0.3	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5
Electric Points Systems	1.4	0.7	0.7	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3
Direct Current Circuits	1.8	0.9	0.9	1.6	1.2	0.8	0.4	0.4	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0
Automatic Level Crossings	1.9	1.0	1.0	2.0	2.0	1.6	1.6	1.6	1.6	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.4
Cable Equipment	1.2	0.6	0.6	1.6	1.2	0.8	0.4	0.4	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2
Renewal of Vehicles for 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8
Total New Investments	9.5	4.8	4.8	19.6	10.2	8.5	9.8	11.4	7.0	6.9	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.2

Forecast Requirements - Signalling: Georgia

Annex 1 - Table 5

Figures in \$US mill.

Description	1988	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	3.8	4.8	6.4	8.4	9.4	10.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	137.2
Installations Samtredia - Poti - Batumi 2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	8.7
Signals	0.8	1.0	1.3	1.8	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	36.6
Electric Points Systems	0.5	0.7	0.9	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	22.6
Direct Current Circuits	0.7	0.9	1.1	1.5	1.8	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	36.8
Automatic Level Crossings	0.7	1.0	1.2	1.7	2.2	2.6	3.0	3.4	3.8	4.2	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	60.6
Cable Spare Parts	0.5	0.6	0.8	1.2	1.5	1.7	1.8	1.9	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	30.3
Equipment for Central Repair Workshops	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	8.0
Renewal of Vehicles for Maintenance and Fault Clearing	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	0.0
	0.1	0.1	0.1	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
Total Maintenance	3.6	4.8	6.0	10.9	13.4	15.5	18.0	20.8	22.6	24.3	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	347.6

Forecast Requirements - Signalling: Georgia

Annex 1 - Table 5

Figures in \$US mill.

Description	1988	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	
Depreciation:																				
Complete Signal Interlocking Locations Installations Samtredia - Poti - Batumi 2 Signals	0.0	0.0	0.0	0.7	1.0	1.3	1.7	2.2	2.5	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	36.6
Electric Points Systems	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	0.1	0.1	0.1	2.3
Direct Current Circuits	0.2	0.3	0.3	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	9.7
Automatic Level Crossings	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	6.0
Cable Equipment	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	7.4
Equipment for Central Repair Workshops Renewal of Vehicles for Maintenance and Fault Clearing	0.2	0.3	0.3	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	16.2
	0.1	0.1	0.1	0.2	0.2	0.2	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	4.0
	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	0.1	0.1	0.1	0.1	0.1	0.0	2.2
	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	5.4
Total Depreciation	0.9	1.2	1.5	2.8	3.5	4.0	4.7	5.4	5.9	6.3	6.8	6.8	6.8	6.7	6.7	6.6	6.6	6.6	6.6	89.9

Forecast Requirements - Telecommunications Georgia

Annex 1 - Table 6

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	0.4	0.4	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
Transmitting Equipment	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4
Telecommunication Exchange Equipmt	0.3	0.3	0.3	0.3	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	4.2
Radio Transmitting Equipment	0.3	0.3	0.3	0.3	1.2	0.8	0.5	0.5	0.5	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7
Other Installations	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Equipment for Central Repair Workshops Renewal of Rolling Stock for Maintenance and Fault Clearing	0.2	0.2	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
	0.1	0.1	0.1	0.1	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	1.6
Total New Investments	1.9	1.9	1.9	1.9	3.6	3.2	2.6	2.5	2.4	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.3
Maintenance Requirements:																				
Cable Equipment	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	4.0	25.4
Transmitting Equipment	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	15.2
Telecommunication Exchange Equipmt	0.1	0.1	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	2.1	13.8
Radio Transmitting Equipment	0.1	0.2	0.2	0.3	0.6	0.8	0.9	1.0	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8	19.2
Other Installations	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2	8.3
Equipment for Central Repair Workshops New Rolling Stock for Maintenance and Fault Clearing	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	7.3
	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	0.0	0.0
	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	5.1
Total Maintenance	0.4	0.9	1.4	1.8	2.7	3.5	4.2	4.8	5.4	6.0	6.5	7.1	7.1	7.1	7.1	7.1	7.1	7.1	14.1	94.3

Forecast Requirements - Telecommunications Georgia

Annex 1 - Table 6

Figures in \$US mill.

Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	
Depreciation:																				
Cable Equipment	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	3.4
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	0.4	3.0
Telecommunication Exchange Equipment	0.0	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	0.4	2.8
Radio Transmitting Equipment	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	3.8
Other Installations	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	0.1	0.1	0.1	0.1	0.1	2.4
Equipment for Central Repair Workshops 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	0.1	0.1	0.1	0.1	0.0	0.0	0.1	2.0
Total Depreciation	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.2	1.4	1.5	1.6	1.7	1.6	1.6	1.5	1.5	1.4	1.4	2.8	21.7