

FINANCIAL ANALYSIS

A. Background

1. The bus industry was highly fragmented until 2002, but several decisions of the Dhaka Metropolitan Regional Transport Committee in favor of company-based operations encouraged the bus industry to restructure itself toward company-based operations. The fleet sizes of the companies remain small—about 70% of the companies have fleet sizes of 11–30 buses. However, in the last ten years, the industry has made a substantial investment, notably in renewing their fleet with compressed natural gas (CNG) buses.

2. According to the Strategic Transport Plan carried out in 2005, the fare regime of public buses in Dhaka is more or less deregulated in reality. The bus operators charge the commuters fare that they are willing to pay, but the government prescribed fare is taken into consideration both by the operators and commuters while fixing and paying the fare. With the current fare level, as fixed by the government, CNG buses can break even or make some profit by resorting to overloading, defaulting in the payment of monthly installments to financial institutions, and forgoing repairs that are not essential to keep the vehicle mechanically on the road.

B. Project Cost

3. Taking into account the financial costs, the total amount needed to finance the project is presented in Table 1.

Table 1: Project Cost
(\$ million)

Item	Total Cost	Year 1	Year 2	Year 3	Year 4	Year 5
A. Investment Costs						
1 Civil Works	127.08	-	4.2	25.9	71.1	25.8
2 Mechanical and Equipment	21.40	-	-	9.2	12.2	-
a. Street Lights	1.63	-	-	0.7	1.0	-
b. Rolling Stock (Buses)	7.23	-	-	2.9	4.3	-
c. Other Equipment (ITS, buses, etc.)	12.53	-	-	5.6	6.9	-
3 Environment and Social Mitigation	17.73	0.0	4.8	3.2	7.2	2.4
a. Environmental and Resettlement Plan	8.08	0.0	4.8	3.2	-	-
b. Compensation and Fleet Scrapping Program	9.65	-	-	-	7.2	2.4
4 Consultants	13.17	7.7	2.4	2.8	0.3	-
5 Taxes	26.58	1.4	1.9	6.0	12.9	4.4
Subtotal (A)	205.95	9.1	13.4	47.1	103.8	32.6
B. Recurrent Costs						
1 SPO, PMU and PIUs' Operating Costs	17.30	3.5	3.5	3.5	3.5	3.5
Subtotal (B)	17.30	3.5	3.5	3.5	3.5	3.5
Total Base Cost	223.25	12.6	16.8	50.6	107.2	36.0
C. Contingencies	24.68	0.3	0.8	5.3	13.4	4.8
D. Financing Charges During Implementation	7.07	0.3	0.5	1.1	2.4	2.8
1 Interest During Implementation	6.67	0.1	0.3	1.0	2.4	2.8
2 Commitment Charges	0.40	0.1	0.1	0.1	0.0	-
Total Project Cost (A+B+C+D)	255.00	13.2	18.1	57.0	123.0	43.7
% Total Project Cost	100%	5%	7%	22%	48%	17%

ITS = Intelligent Transport Systems, PIU = Project Implementation Unit, PMU = Project Management Unit, SPO = Special Project Organization,

Note: Numbers may not sum precisely because of rounding.

Source: Project preparatory technical assistance and Asian Development Bank fact-finding mission estimates, 2011.

4. The project will be financed under the terms in Table 2.

Table 2: Financing Plan and Terms
(\$ million)

Item	ADB			AFD	GEF	Gov't	Total
	OCR	ADF	HADF				
Loan amount	100	45	15	45	4.6	45.4	255
Currency	US dollar	SDR	SDR	euro	US dollar	taka	
Interest rate	LIBOR +0.4%	1.0% 1.5%	1.0% 1.5%	LIBOR +1.45%	grant		
	Floating	Fixed	Fixed	Floating			
Proxy fixed rate	0.90%			+1.95%			
Other fees/charges	0.15%	0%	0%	0.5%			
Loan period	25 years	32 years	32 years	20 years			

ADB = Asian Development Bank, ADF = Asian Development Fund (soft terms), AFD = Agence Française de Développement, GEF = Global Environment Facility, HADF = Hard Asian Development Fund (hard terms), LIBOR = London interbank offered rate, OCR = ordinary capital resources..

Source: Project preparatory technical assistance and Asian Development Bank fact-finding mission estimates, 2011.

C. Financial Analysis

5. A financial cost–benefit analysis was undertaken with the following assumptions: (i) the project implementation period is 5 years from 2012; (ii) the evaluation period is 30 years from commission; (iii) 2011 constant prices are used; (iv) the exchange rate is Tk70 = \$1; and (v) the estimated transport demand in the bus rapid transit (ridership) is 100,000 passengers per day.

6. The weighted average cost of capital (WACC) is shown in Table 3.

Table 3: Weighted Average Cost of Capital
(%)

Item	ADB	ADB	AFD	GEF	Gov't	Total
	OCR	ADF+HADF				
Amount (\$ million)	100.00	60.00	45.00	4.60	45.40	255.00
Weighting	39.22	23.53	17.65	1.80	17.80	
Nominal cost	0.90	1.50	1.95	0.00	9.00	
Tax rate	0.00	0.00	0.00	0.00	0.00	
Tax adjusted nominal rate	0.90	1.50	1.95	0.00	9.00	
Inflation rate	1.00	1.00	1.00	1.00	7.20	
Real cost	(0.10)	0.50	0.94	(0.99)	1.68	
Weighted component	(0.04)	0.12	0.17	(0.02)	0.30	
WACC	0.52					

() = negative, ADB = Asian Development Bank, ADF = Asian Development Fund (soft terms), AFD = Agence Française de Développement, GEF = Global Environment Facility, HADF = Hard Asian Development Fund (hard terms), OCR = ordinary capital resources, WACC = weighted average cost of capital.

Source: Project preparatory technical assistance and Asian Development Bank fact-finding mission estimates, 2011.

7. The assessment was carried out assuming investment costs are subsidized by the Government of Bangladesh. Therefore, only operation and maintenance (O&M) costs are considered.

8. The financial internal rate of return (FIRR) is shown in Table 4.

Table 4: Financial Internal Rates of Return

Item	Net Benefits
Net present value (\$ million)	60.2
Financial internal rate of return (%)	16.5

Source: Project preparatory technical assistance and Asian Development Bank fact-finding mission estimates, 2011.

9. Sensitivity analysis was also undertaken under various assumptions (Table 5).

Table 5: Sensitivity Analysis Results

Item	NPV (\$ million)	FIRR (%)	Switching value (%)
10% increase in O&M expenses	20.2	4.7	15.0
10% decrease in revenues	3.1	1.0	11.5

FIRR = financial internal rate of return, NPV = net present value, O&M = operation and maintenance.

Source: Project preparatory technical assistance and Asian Development Bank fact-finding mission estimates, 2011.

10. The decrease in revenues was the most sensitive risk factor because the tariffs are low (paras. 9–10). However, the demand for an improved service is very high, so a decrease in ridership is unlikely. Sensitivity analysis indicates that the project continues to be financially viable in adverse scenarios.

D. Affordability

11. The government sets the fare for public transport buses, on the basis of an evaluation of operational costs. This evaluation is undertaken by a committee formed of representatives from the government and the private operators. The method for operational cost analysis has been greatly influenced by the method adopted by the Bangladesh Road Transport Corporation. Until the formation of bus companies by the private sector, Bangladesh Road Transport Corporation was the only company-based bus operation in Dhaka and the unique source of data on operational costs.

12. The current fare was set in April 2007 at Tk0.87 per kilometer (km) for buses and Tk0.90 per km for minibuses. The fare level for buses was applied in this analysis. The efficiency of the infrastructure as well as the larger type of vehicle allows the bus rapid transit to remain sustainable despite the low levels of tariff. Under these circumstances, the social acceptability of the bus rapid transit rates is not anticipated to pose a problem.