

FINANCIAL ANALYSIS

1. The investment program will be implemented through 6 components, out of which 3 components are expected to be implemented under a Multitranche Financing Facility. The financial analysis presents a cost benefit analysis to determine the financial feasibility of Components A and B, Components C and D, Component E, Component F, and all components together, and an assessment of the required tariffs.

A. Cost Benefit Analysis

1. Major Assumptions

a. Benefits

2. The major benefits considered in the financial analysis are additional revenues due to (i) additional volume from recovery of non revenue water due to rehabilitation of the network and additional water sources, and (ii) increase in tariff. The allocation of additional volume to the components are shown in Table 1.

Table 1: Allocation of Incremental Water (mld)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Baseline	795	780	765	750	735	568	599	631	662	693	720
Component-A			85	168	248	281	289	297	304	312	319
Component-B						300	300	300	300	300	300
Component-C											
Component-D											
Component-E	60	120	120	120	120	120	120	120	120	120	120
Component-F			135	135	135	135	135	135	135	135	135
Total	855	900	1,105	1,173	1,238	1,404	1,443	1,483	1,521	1,560	1,594

3. Additional benefits from tariff increases were based on the tariff increases/m³ (shown in Table 2) multiplied by the total consumption volume generated by each of the phases.

Table 2: Proposed Increases, 2006 – 2016, 2006 prices and current prices (Tk/m³)

	2006	2007	2010	2013	2016
% Increase		50%	10%	45%	5%
Proposed Tariffs 2006 prices (Tk/m ³)					
Residential	5.25	7.88	8.66	12.56	13.19
Commercial/Industrial	17.50	26.25	28.88	41.87	43.96
Proposed Tariffs, nominal prices – 5% yearly inflation (Tk/m ³)					
Residential	5.25	8.27	10.53	17.67	21.48
Commercial/Industrial	17.50	27.56	35.10	58.91	71.61

4. The volume of incremental water by each phase is allocated to residential (87%), commercial (7%) and industrial (2%) based on current estimates. The remaining 4% is consumed in slum areas through standpipes paid for by the government. No additional standpipes are expected to be provided in the future.

5. For the years 2006 to 2012, the supply will be less than the calculated demand. Average consumption for non-slum residential consumers will be limited to 103 to 127 lcd which is lower than estimated demand of 140 to 150 lcd during the same period. By 2013 when supply is deemed adequate, consumption is assumed to equal the average demand of 138 lcd. Consumption reduces again to 127 lcd in 2018 as a result of DWASA's efforts at demand management. Beyond 2017, without any additional water sources, consumption is expected to be restricted until it drops to about 73 lcd in 2032.

6. Consumption for 2006 and 2007 is limited to 304 m³/month per commercial connection and 80 m³/month per industrial connection. From 2008 onwards, consumption is estimated at 310 m³/month per commercial connection and 82 m³/month per industrial connection.

b. Costs

7. Total project investment cost for Component A and B exclusive of price contingencies and interest during construction, is estimated at Tk 11.28 billion. Investment cost of the other project components are as shown in Table 3.

Table 3: Cost Estimates of Phases Covered in Analysis

Component	Coverage	Investment Cost (Tk billion, current prices)
Component A	Network and OHT rehab, metering, capacity building	11.28
Component B	Network expansion, construction of new OHT, rehabilitation of zonal offices	1.62
Component C	Primary Distribution	4.10
Component D	Source Development (BOOT)	17.23
Component E	New DTW, generators (GoB)	0.52
Component F	225 mld STWP (Sadaibad, Danida)	7.00

Note: Investment Cost includes base cost plus physical contingencies

8. The financial analysis also considered operating and maintenance costs. Key assumptions used are as follows:

- (i) Incremental salaries refer to additional salaries expected to be required as DWASA implements a revised organization and salary scale plan in line with the expected results of the organizational development plan initiated under the project. It is expected that this will result in an average increase of 2 times the current salary levels.
- (ii) Incremental costs include power at Tk 1.27/m³, generator fuel at Tk 0.10/m³, and chemical at 0.27/m³ of water produced.
- (iii) Incremental Maintenance expenses were estimated at 2% of existing assets (in addition to the current provision at 2% of existing assets which is inadequate). Maintenance of new assets is estimated at 2%. Expenses were allocated to the volume generated by each project package in relation to the total volume produced.

- (iv) Incremental O&M cost for Component D (BOOT) was computed at Tk 2.25/m³ produced.

2. Financial Internal Rate of Return (FIRR)

9. Financial internal rates of return (FIRRs) were computed for Component A and B (Table 4), Component C and D (Table 5), Component E (Table 6), Component F (Table 7) and All Components (Table 8).

Table 4: FIRR Calculation (Component A and B)
(Tk million)

	Year	Incremental Revenue (Tk m)	Incremental Costs			Net Cash Flow (Tk m)	Sensitivity Tests		
			Investment Cost (Tk m)	Incremental O&M (Tk m)	Total Costs (Tk m)		+20% Costs (Tk m)	-20% Revenue (Tk m)	+20% Costs 20% Revenue (Tk m)
Year 1	2008	-	1,354	167	1,520	(1,520)	(1,825)	(1,520)	(1,825)
2	2009	-	1,943	169	2,111	(2,111)	(2,533)	(2,111)	(2,533)
3	2010	572	2,876	286	3,162	(2,590)	(3,222)	(2,704)	(3,336)
4	2011	872	2,559	408	2,967	(2,095)	(2,688)	(2,269)	(2,862)
5	2012	1,162	2,513	499	3,012	(1,850)	(2,453)	(2,083)	(2,685)
6	2013	1,693	1,651	526	2,177	(483)	(919)	(822)	(1,257)
7	2014	1,743	-	622	622	1,122	997	773	649
8	2015	1,743	-	572	572	1,172	1,057	823	709
9	2016	1,923	-	625	625	1,299	1,174	914	789
10	2017	1,974	-	626	626	1,348	1,223	953	828
11	2018	2,018	-	627	627	1,391	1,265	987	861
12	2019	2,192	-	623	623	1,569	1,444	1,131	1,006
13	2020	2,189	-	619	619	1,570	1,446	1,132	1,008
14	2021	2,185	-	615	615	1,570	1,447	1,133	1,010
15	2022	2,472	-	610	610	1,862	1,740	1,367	1,245
16	2023	2,467	-	606	606	1,861	1,740	1,368	1,247
17	2024	2,463	-	602	602	1,861	1,741	1,369	1,248
18	2025	2,790	-	597	597	2,193	2,074	1,635	1,515
19	2026	2,785	-	593	593	2,192	2,073	1,635	1,516
20	2027	2,779	-	589	589	2,190	2,072	1,634	1,517
21	2028	3,152	-	584	584	2,568	2,451	1,938	1,821
22	2029	3,145	-	580	580	2,565	2,449	1,936	1,820
23	2030	3,138	-	576	576	2,562	2,447	1,935	1,819
24	2031	3,708	-	571	571	3,136	3,022	2,395	2,281
25	2032	3,698	(6,448)	567	(5,881)	9,579	10,756	8,840	10,016
FIRR						10.62%	8.13%	7.61%	5.45%
NPV						12,865	9,467	6,895	3,497
WACC						3.75%			

Table 5: FIRR Calculation (Components C and D)
(Tk million)

	Year	Incremental Revenue (Tk m)	Incremental Costs			Net Cash Flow (Tk m)	Sensitivity Tests		
			Investment Cost (Tk m)	Incremental O&M (Tk m)	Total Costs (Tk m)		+20% Costs (Tk m)	-20% Revenue (Tk m)	+20% Costs 20% Revenue (Tk m)
Year 1	2008	-	1	-	1	(1)	(2)	(1)	(2)
2	2009	-	1	-	1	(1)	(2)	(1)	(2)
3	2010	-	1,666	-	1,666	(1,666)	(1,999)	(1,666)	(1,999)
4	2011	-	4,564	-	4,564	(4,564)	(5,477)	(4,564)	(5,477)
5	2012	-	9,472	-	9,472	(9,472)	(11,366)	(9,472)	(11,366)
6	2013	2,551	5,625	329	5,954	(3,403)	(4,593)	(3,913)	(5,104)
7	2014	2,600	-	329	329	2,272	2,206	1,752	1,686
8	2015	2,600	-	329	329	2,272	2,206	1,752	1,686
9	2016	2,779	-	329	329	2,450	2,385	1,895	1,829
10	2017	2,828	-	329	329	2,500	2,434	1,934	1,868
11	2018	2,870	-	329	329	2,542	2,476	1,968	1,902
12	2019	3,034	-	329	329	2,705	2,640	2,099	2,033
13	2020	3,030	-	329	329	2,702	2,636	2,096	2,030
14	2021	3,027	-	329	329	2,698	2,633	2,093	2,027
15	2022	3,297	-	329	329	2,969	2,903	2,309	2,243
16	2023	3,293	-	329	329	2,964	2,899	2,306	2,240
17	2024	3,288	-	329	329	2,960	2,894	2,302	2,237
18	2025	3,597	-	329	329	3,268	3,203	2,549	2,483
19	2026	3,591	-	329	329	3,263	3,197	2,545	2,479
20	2027	3,586	-	329	329	3,257	3,192	2,540	2,475
21	2028	3,938	-	329	329	3,609	3,543	2,822	2,756
22	2029	3,931	-	329	329	3,602	3,537	2,816	2,750
23	2030	3,924	-	329	329	3,595	3,530	2,811	2,745
24	2031	4,460	-	329	329	4,132	4,066	3,240	3,174
25	2032	4,452	(10,665)	329	(10,336)	14,788	16,855	13,898	15,965
						FIRR	11.66%		
						NPV	20,149		
						WACC	3.69%		
							9.37%	8.89%	6.93%
							16,671	12,641	9,162

Table 6: FIRR Calculation (Component E)
(Tk million)

	Year	Incremental Revenue (Tk m)	Incremental Costs			Net Cash Flow (Tk m)	Sensitivity Tests		
			Investment Cost (Tk m)	Incremental O&M (Tk m)	Total Costs (Tk m)		+20% Costs (Tk m)	-20% Revenue (Tk m)	+20% Costs 20% Revenue (Tk m)
Year 1	2008	203	145	89	234	(31)	(78)	(72)	(119)
2	2009	405	371	178	549	(144)	(254)	(225)	(335)
3	2010	445	-	171	171	274	239	185	150
4	2011	444	-	186	186	258	221	169	132
5	2012	443	-	181	181	262	226	174	137
6	2013	642	-	173	173	469	435	341	306
7	2014	641	-	209	209	433	391	304	263
8	2015	641	-	204	204	437	396	309	268
9	2016	671	-	200	200	471	431	337	296
10	2017	670	-	197	197	473	434	339	300
11	2018	669	-	193	193	475	437	341	303
12	2019	734	-	192	192	542	504	396	357
13	2020	733	-	190	190	543	505	396	358
14	2021	731	-	188	188	543	505	397	359
15	2022	839	-	187	187	653	615	485	447
16	2023	838	-	185	185	652	615	485	448
17	2024	836	-	184	184	652	616	485	448
18	2025	959	-	182	182	777	741	585	549
19	2026	957	-	180	180	777	741	585	549
20	2027	955	-	179	179	776	740	585	549
21	2028	1,096	-	177	177	918	883	699	664
22	2029	1,093	-	176	176	917	882	699	664
23	2030	1,090	-	174	174	916	881	698	663
24	2031	1,305	-	172	172	1,132	1,098	872	837
25	2032	1,301	(258)	171	(88)	1,389	1,406	1,129	1,146
FIRR						130.79%	69.86%	62.45%	40.00%
NPV						6,112	5,559	4,337	3,784
WACC						5.66%			

Table 7: FIRR Calculations (Component F)
(Tk million)

	Year	Incremental Revenue (Tk m)	Incremental Costs			Net Cash Flow (Tk m)	Sensitivity Tests		
			Investment Cost (Tk m)	Incremental O&M (Tk m)	Total Costs (Tk m)		+20% Costs (Tk m)	-20% Revenue (Tk m)	+20% Costs 20% Revenue (Tk m)
Year 1	2008	-	2,756	-	2,756	(2,756)	(3,307)	(2,756)	(3,307)
2	2009	-	2,756	-	2,756	(2,756)	(3,307)	(2,756)	(3,307)
3	2010	500	1,480	182	1,662	(1,162)	(1,494)	(1,262)	(1,594)
4	2011	500	-	190	190	310	272	210	172
5	2012	499	-	176	176	323	287	223	188
6	2013	722	-	167	167	556	522	411	378
7	2014	721	-	207	207	514	473	370	328
8	2015	721	-	202	202	519	479	375	334
9	2016	755	-	198	198	557	517	406	367
10	2017	753	-	194	194	560	521	409	370
11	2018	752	-	190	190	562	524	412	374
12	2019	826	-	188	188	638	600	472	435
13	2020	824	-	186	186	638	601	473	436
14	2021	823	-	185	185	638	601	474	437
15	2022	944	-	183	183	762	725	573	536
16	2023	942	-	181	181	762	725	573	537
17	2024	940	-	179	179	761	726	573	537
18	2025	1,079	-	177	177	902	866	686	651
19	2026	1,077	-	175	175	901	866	686	651
20	2027	1,074	-	174	174	901	866	686	651
21	2028	1,233	-	172	172	1,061	1,026	814	780
22	2029	1,230	-	170	170	1,060	1,026	814	780
23	2030	1,226	-	168	168	1,058	1,025	813	779
24	2031	1,468	-	166	166	1,302	1,268	1,008	975
25	2032	1,464	(3,496)	164	(3,331)	4,795	5,461	4,502	5,168
FIRR						7.73%	5.97%	5.60%	4.06%
NPV						4,254	2,707	1,856	309
WACC						3.80%			

Table 8: FIRR Calculations (All Components)
(Tk million)

	Year	Incremental Revenue (Tk m)	Incremental Costs			Net Cash Flow (Tk m)	Sensitivity Tests		
			Investment Cost (Tk m)	Incremental O&M (Tk m)	Total Costs (Tk m)		+20% Costs (Tk m)	-20% Revenue (Tk m)	+20% Costs 20% Revenue (Tk m)
Year 1	2008	-	4,256	258	4,514	(4,514)	(5,417)	(4,514)	(5,417)
2	2009	-	5,071	351	5,422	(5,422)	(6,506)	(5,422)	(6,506)
3	2010	1,517	6,023	629	6,651	(5,134)	(6,464)	(5,437)	(6,768)
4	2011	1,816	7,123	767	7,890	(6,074)	(7,652)	(6,437)	(8,015)
5	2012	2,104	11,985	832	12,817	(10,712)	(13,276)	(11,133)	(13,697)
6	2013	5,609	7,276	1,313	8,590	(2,981)	(4,699)	(4,103)	(5,821)
7	2014	5,706	-	1,557	1,557	4,149	3,837	3,008	2,696
8	2015	5,706	-	1,538	1,538	4,168	3,861	3,027	2,720
9	2016	6,128	-	1,522	1,522	4,606	4,302	3,381	3,076
10	2017	6,226	-	1,506	1,506	4,719	4,418	3,474	3,173
11	2018	6,309	-	1,493	1,493	4,816	4,517	3,554	3,256
12	2019	6,786	-	1,481	1,481	5,305	5,009	3,948	3,652
13	2020	6,776	-	1,469	1,469	5,307	5,013	3,952	3,658
14	2021	6,766	-	1,457	1,457	5,309	5,017	3,956	3,664
15	2022	7,553	-	1,445	1,445	6,107	5,818	4,597	4,308
16	2023	7,540	-	1,434	1,434	6,107	5,820	4,599	4,312
17	2024	7,528	-	1,422	1,422	6,106	5,821	4,600	4,316
18	2025	8,425	-	1,410	1,410	7,016	6,734	5,330	5,049
19	2026	8,410	-	1,398	1,398	7,012	6,732	5,330	5,050
20	2027	8,394	-	1,386	1,386	7,008	6,730	5,329	5,052
21	2028	9,418	-	1,374	1,374	8,044	7,769	6,160	5,885
22	2029	9,398	-	1,363	1,363	8,036	7,763	6,156	5,884
23	2030	9,378	-	1,351	1,351	8,027	7,757	6,152	5,882
24	2031	10,941	-	1,339	1,339	9,602	9,334	7,414	7,146
25	2032	10,915	(20,867)	1,327	(19,540)	30,455	34,363	28,272	32,180
FIRR						11.22%	8.80%	8.30%	6.20%
NPV						42,933	33,537	24,950	15,554
WACC						3.75%			

3. Weighted Average Cost of Capital (WACC)

10. The WACC for each component/ combination of components, was estimated at based on a real cost of debt and equity. Taxes at the rate of 40% of income are imposable to DWASA and are therefore considered in the calculations. The WACC is indicated in the FIRR tables.

4. Conclusion

11. All components were determined to be feasible, with internal rates of return (IRR) higher than their respective WACCs. The lowest IRR is 7.73% for Component F (Sadaibad STWP) and the highest IRR is 130.79% for Component E (deep tubewells), understandably due to the low investment cost. The FIRR for Components A and B is 10.62% against the WACC of 3.75%. The FIRR for all components is 11.22% against the WACC of 3.75%.

12. Three possible scenarios for all components/ combination of components (including 20% decrease in benefits, 20% increase in costs, and combination of 20% decrease in benefits and 20% increase in costs) were run for the sensitivity analysis. The project remains feasible under all scenarios

13. Since Component A is the first loan, Components A and B were subjected to additional sensitivity analyses to test the project feasibility against operating risks. Table 9 shows that the FIRR is very sensitive to non revenue water and tariff. The project is no longer feasible if the target tariff is not implemented.

Table 9: Additional Sensitivity Analysis for Components A and B

	Additional Scenario	Cash (2014)	FIRR
	WACC		3.75 %
	Base Case	Tk 6.98 billion	10.62 %
1	NRW does not improve from present 40%		-7.35 %
2	Collection Efficiency does not improve from present 62%	Tk negative 2.00 billion	
3	Only 50% of target tariff is implemented		6.03 %
4	No tariff increase is implemented		1.08 %

B. Tariff

1. Policy on Cost Recovery Targets

14. The required amount of cost sharing by the users is specifically mentioned in the Water Supply and Sanitation (WSS) Policy 1998 and in the recent Pro-Poor Strategy 2005. The WSS Policy 1998, National Water Policy (NWP), 1998 and National Water Management Plan (NWMP), 2004, in their policy principles, recognize the economic value of water and the need for eventual full cost recovery of water and sanitation services. However, since DWASA believes that water is a social good, it will shift to full cost-recovery gradually and with safety-nets to maintain the price affordable among the hard-core poor.

15. The WSS Policy, 1998 states that urban water supply should be delivered at cost (meaning operation and maintenance cost) and full cost recovery should be aimed for in the near future. Although not specifically mentioned, the same cost sharing principle applies for urban sanitation. The Sector Development Framework (SDF) 2004 stresses the need for increasing water tariff in urban areas to at least cover the operations and maintenance costs. The Pro-Poor Strategy 2005, further defines the cost sharing by stating that the hard-core poor pay only 50% of what is required as cost contribution by non hard-core poor users with an upper ceiling of Taka 500 per household implying a cross-subsidy for operations and maintenance costs.

2. Tariff and Structure

16. The current tariff is as shown in Table 10. The major features are:

- a) A fixed rate per m³ of Tk 5.25 for domestic and community connections and Tk 17.50 for offices, commercial and industrial connections.
- b) A tariff structure consisting of one rate regardless of consumption block, and
- c) Sewer tariffs set at 100% of the water tariff.

17. Tariff structure is simple, and tariff level has generally been increasing annually at 5%; the basis for setting the tariff amounts however is not clear and there is no policy on how the increase is determined. The existing tariff structure does not encourage conservation of water. During the stakeholders workshop last August 14, 2006, other tariff structures like increasing block tariffs (IBT) were explored. Issues related to DWASA's lack of autonomy in exercising authority to approve tariffs were also discussed. More related workshops to review the DWASA Act and to explore civil society's role in the sector are being planned. It is expected that a clear tariff policy can emerge from these workshops following a participatory approach.

Table 10: Existing Tariff

A FOR WATER USAGE AT CONNECTIONS										
	Water				Sewer					
	1 Metered Connection Regular Billing Minimum rate for <u>both</u> water and sewer (zero consumption) Consumption above zero Domestic/ Community Commercial/ Industrial Billing per connection during construction Domestic/ Community Commercial/ Industrial 2 Unmetered Connection Valuation Billing (as % of valuation holding) Domestic/ Community Commercial/ Industrial	Taka/ conn	3/4"	1"	1 1/2"	2"	Tk 5.25/m3 Tk 17.50/m3	Tk 5.25/m3 water consumed Tk 17.50/m3 water consumed		
	Taka/ conn	3/4"	1"	1 1/2"	2"					
		662	1134	2268	4725					
		1902	3416	6830	14230					
	% of vh/month	33.55%					33.55%			
		37.00%					37.00%			
							2 With Water Connection and Sewer - Unconnected (sewer line within 100 feet) 12.15% of valuation of holdings 3 Only sewer connection 33.55% of valuation of holdings			
II. OTHER CHARGES										
1 Service Connection Fee (Taka) Domestic/ Community Commercial/ Industrial 2 Cost of Meter (Taka) 3 Deposit for temporary connection (to cover bills in case of default during construction) 4 Meter Fee, Installation Charge and Testing Fee 5 Water Connection Form Sewer Connection Form Reconnection Fee Penalty (maximum, for illegal connection)		3/4"	1"	1 1/2"	2"		3/4"	1"	1 1/2"	2"
		500	1,500	10,000	15,000		400	1,000	5,000	7,500
		500	1,500	10,000	15,000		1,000	2,000	10,000	15,000
		1,250	1,520	up to Tk	126,750		N/A			
		5,000	10,000	15,000	20,000					
		1,668	3,650	9,600	10,350					
		Taka 100					Taka 100			
		Taka 1000								
		Taka 10000								
III OTHER WATER SALES										
1 Rate for sale by trucks (Water sale direct)	In gallons, equivalent of Taka 25 to 31 per m3									
2 Deep Tube well tariff	permission fee (Taka 80000 to Taka 350000) plus yearly renewal charge (Taka 50000 to 220000)									
3 Permission fee for Multi storied building	Certificate (Tk 500) plus Approval Fee (Tk 2,000 to Tk 5,000)									
4 Street Hydrant (public standpipes)	Taka 23.70/ thousand gallons (Estimated at 2,500 gallons/day per standpipe, 1,643 standpipes in 2006)									

3. Tariff Setting Process

18. Water tariff is fixed by the government. DWASA Board has the power to increase water tariff by 5% once a year subject to the approval of the government. Tariffs have generally increased by this rate during the past years. The latest was a 5% increase in Jan 7, 2005. The basic tariffs are relatively simple and easy to understand, and the tariff increases are predictable following ADB guidelines on good governance. However no public consultation is being made regarding tariff increases. Other observations include:

- As Table 10 shows, there are several processing fees imposed on the applicant for a connection, all totaling Tk 8,618 for a ¾" connection. This includes the connection fee (Tk 500), cost of the meter (Tk 1,250), deposit for temporary connection (Tk 5,000), meter installation and testing fee (Tk 1,668), and water and sewer connection form (Tk 200). Even without the cost of the meter and the deposit for temporary connection, the connection fee still amounts to Tk 2,288 per connection.
- There is no provision for installment payment for connection fees.
- There is a problem with obtaining meters, since accredited suppliers reportedly do not carry stock of meters. There is also no incentive for consumers to get their connections metered and no penalties for unmetered connections.

4. Cost Recovery from Existing and Proposed Tariff

19. The 2005 Income Statement provided by DWASA showed a net income of Tk 13 million. After making the adjustments and incorporating the audit recommendations for unrecorded pension and power costs however, the operations resulted in a net loss of Tk 40 million indicating that the existing tariffs at Tk 5.25/m³ for residential use and Tk 17.50/m³ for commercial/industrial use are not adequate to fully recover costs. In order to survive despite the low collection efficiency of 62% for water accounts, DWASA made use of the cash provided from non-cash expenditures like depreciation and delayed debt repayment and interest payment.

20. The proposed tariff that will fully recover all costs (Cost Recovery Tariff) during the project implementation period are shown in Table 11. This is compared with two other levels of tariffs namely, (i) tariffs that will ensure that DWASA has sufficient cash equivalent to 2 months cash operating requirements (2 months cash O&M Tariff), and (ii) economic tariffs (Affordable Tariffs) based on a per capita consumption of 150 lcd in 2006 for serviced areas gradually reducing to 136 lcd in 2013 and 30 lcd in slums in 2006 gradually increasing to 37 lcd in 2013.

Table 11: Proposed Residential Tariffs (Tk/m³, real (2006) prices)

	2006	2007	2008	2009	2010	2011	2012	2013
Cost Recovery Tariff	5.25	7.88	7.88	7.88	8.66	8.66	8.66	12.56
<i>% increase</i>		50%			10%			45%
2 mos cash O&M Tariff	5.25	5.25	6.30	6.30	7.56	7.56	7.56	9.07
<i>% increase</i>			20%		20%			20%
Economic Affordable Tariff, Serviced area	44	45	46	47	48	49	50	51
Economic Affordable Tariff, Slums	41	40	39	38	37	36	35	34

21. The 50% tariff increase proposed in 2007 aims primarily to cover additional O&M costs due to increases in organization/staffing, chemical requirements and maintenance costs. In spite of expected additional revenues from recovered NRW and improvements in collection efficiency, increases in O&M costs and debt service in the coming years will require further tariff increases as shown in Table 11.

22. Stepped tariffs or increasing block tariffs (IBT) are being explored as a tool to minimize the impact of the required tariff increases for connections with low levels of consumption especially the poor customers. Table 12 shows how the proposed residential tariffs could be converted into an IBT structure assuming that total revenues remain constant. The table shows that tariff increases for connections consuming not more than 10 m³/month will continue to be based on the current practice of 5% per year. In 2013, there will be 4 blocks. The second block is higher than the needed average tariff by 15% and the third block is 50% higher than the needed average tariff. 3rd block is introduced in 2010 for consumption above 50 m³/month and by 2013 it moves down to consumption above 25 m³/month. By 2013 the fourth block is introduced with 100% higher price than the needed average tariff for consumption above 50 m³/month.

Table 12: Proposed increasing block tariff (Tk/m³)

	2006	2007	2008	2009	2010	2011	2012	2013
2006 prices								
Tariff without project intervention	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25
Needed average tariff with project interventions	5.25	7.88	7.88	7.88	8.66	8.66	8.66	12.56
Proposed Increasing block tariff (IBT)								
Up to 10m ³ (basis)		5.25	5.25	5.25	5.25	5.25	5.25	5.25
More than 10 m ³ (average +15%)		9.06	9.06	9.06	9.96	9.96	9.96	14.44
More than 25 m ³								18.84
More than 50 m ³					12.99	12.99	12.99	25.12
Nominal prices (5% yearly increment due to inflation)								
Tariff without project intervention	5.25	5.51	5.79	6.08	6.38	6.70	7.04	7.39
Needed average tariff with project interventions	5.25	8.27	8.68	9.12	10.53	11.06	11.61	17.67
Proposed Increasing block tariff (IBT)								
Up to 10m ³ (basis)		5.51	5.79	6.08	6.38	6.70	7.04	7.39
More than 10 m ³ (average +15%)		9.51	9.98	10.49	12.11	12.72	13.35	20.32
More than 25 m ³								26.51
More than 50 m ³					15.80	16.59	17.42	35.34